JVC Service Manual

COMPONENT DIGITAL VISION MIXER

MODEL KM-5000

Including optional products.
(KM-BK5001, KM-BK5002, KM-BK5003, KM-BK5004,
KM-BK5005, KM-BK5011, KM-BK5012, KM-BK5013,
KM-BK5014, KM-BK5015)

VICTOR COMPANY OF JAPAN, LIMITED

JVC Instructions

COMPONENT DIGITAL VISION MIXER

KM-5000

4:2:2
COMPONENT DIGITAL

Due to design modifications, data given in this instruction book are subject to possible change without prior notice.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

AVERTISSEMENT:
POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.

Warning Notice
FOR YOUR SAFETY

To ensure safe opration the three-pin plug supplid must be inserted only into a standard three-pin power point whitch is effectively grounded through the normal household wiring. Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth ground. Wrongly wired extention cord are a major cause of fatalities. The fact that the exuipment operates satisfactorily does not imply that the power point is properly ground and that the installation is completely safe. For your safety, if in any doubt about the correct grounding of the power point, consult a qualified electrician.

WARNING—THIS APPLIANCE MUST
BE EARTHED
IMPORTANT

The wires in this mains lead are colored in accordance with the following code:

GREEN-AND-YELLOW : EARTH
BLUE : NEUTRAL
BROWN : LIVE

As the colors of the wires in the mains lead of this apparatus may not correspond with the colored markings identifying the terminals in your plug, proceed as follows. The wire which is colored GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked with the letter E or by safety earth symbol $\perp$ or coloredGREEN or GREEN-AND-YELLOW. The wire which is colored BLUE must be connected to the terminal which is marked with the letter N or colored BLACK. The wire whichis colored BROWN must be connected to the terminal which is marked with the letter L or colored RED.

CONTAIN NICKEL-CADMIUM BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY.

Thank you for purchasing the JVC KM-5000 Component Digital Vision Mixer.

To Utilize this product to its fullest, please read this instruction booklet carefully and entirely for the best understanding of its capabilities and operation.

PRECAUTIONS

Safety Precautions

- Use only with the rated power supply.
- Do not modify the unit or operate it with its cover removed.
- Do not allow flammable objects, water or metallic objects to get inside the unit as they could cause damage and malfunctions.
- When not to be used for a long period of time, disconnect the power cord from the power outlet.
- When there is any abnormality (noise, smoke, etc.), immediately switch off, disconnect the power cord from the power outlet, and contact your nearest JVC-authorized service agent.

Handling and storage precautions

- To extend the unit's service life, avoid using the KM-5000 under the following conditions:
    - in extremely hot, cold or humid places,
    - in dusty places,
    - near appliances generating strong magnetic fields,
    - in places subject to vibrations
    - in poorly ventilated places.
- When installing or moving the KM-5000, do not apply violent vibrations and shocks to the unit.
- When the power supply or voltage is too high or too low, the unit's service life may be shortened and it may not achieve its optimum performance.
- A cooling fan is provided in the side panel.
  When mounting the unit in a rack, etc., assure sufficient ventilation space.
- Do not apply strong force to the fader lever or handle it roughly.

CONTENTS

1. GENERAL

This chapter gives an overview of the basic structure of the KM-5000 including its components and bus configuration. We recommend that users not familiar with this type of unit read this chapter carefully as it also provides general definitions of specific technical terms used in other parts of the text.

1.1 Components

1.1.1 Basic Structure

Two-Unit Structure

The KM-5000 is a two-unit structure consisting of a main unit (KM-5000M) and a control unit (KM-5000P). Each unit is entirely self-contained, meaning that it is possible to control all the functions of the main unit externally without using the control unit. However, the name, KM-5000, is usually used in reference to the complete system consisting of both the main and control units.

Multi-Format Input/Output

The KM-5000's internal processing is performed using the 4:2:2 component digital processing (CCIR-656) standard. However, input/output signals are multi-format-compatible, allowing the KM-5000 to handle four different types of video signal; serial digital, parallel digital, analog component, and analog composite. Input and output modules for the various formats are optionally available so you can customize the KM-5000 to meet your own format requirements.
I/O modules are preset at the factory as shown in the table below.

Table 1-1

I/O	Signal designation	Depends on type of module
Input	Test signal generator	Standard
	Back color generator	Standard
	Channel 1 — 12	Optional input module
	External key input 1-6	Optional input module
Out-put	PGM1	Optional output module
	PGM2	Serial digital output module Standard-equipped for KM-BK5013
	PGM3	Analog component output module Standard-equipped for KM-BK5011
	PVW	Analog composite output module Standard-equipped for KM-BK5012
	AUX1, AUX2	Optional output module
	KEY	Optional output module

1.1.2 | Optional Input Module

The table below shows the list of optional input modules. Since each input module incorporates an automatic phase adjuster, you do not have to concern yourself with the phase of input signals.

■ The automatically adjustable phase range is –64.0 µsec (advance) to +62.5 µsec (delay).

Table 1-2

Designation	Model No.	Remarks
Analog component input module	KM-BK5001	
Analog composite input module	KM-BK5002	
Serial digital input module	KM-BK5003	
Parallel digital input module	KM-BK5004	
Analog key input module	KM-BK5005	

1.1.3 | Optional Output Module

The table below shows the list of optional output modules.

Table 1-3

Designation	Model No.	Remarks
Analog component output module	KM-BK5011	2-line
Analog composite output module	KM-BK5012	2-line
Serial digital output module	KM-BK5013	3-line
Parallel digital output module	KM-BK5014	2-line
Analog key output module	KM-BK5015	1-line

1.2 Video Bus Configuration

The KM-5000 has seven different versatile video buses and a bus dedicated to external key. Video input signals to the KM-5000 can be freely allocated to these bus lines.

The versatile video buses are outlined as follows.

1)	Program background bus	: Handles the base video to be fed to the program line.
2)	Preset background bus	: Handles the video exchangeable with the program bus video.
3)	Key bus	: For key fill and key source selection.
4)	DSK bus	: For DSK fill and DSK source selection.
5)	AUX bus 1	: Versatile bus to handle the signal to be sent to an external unit.
6)	AUX bus 2	: Versatile bus to handle the signal to be sent to an external unit.
7)	DSK background bus	: For DSK background selection

Video input to each bus can be selected from among the 12 video inputs, as well as from black (switchable to the built-in signal generator), and back color. The video signal from the M/E sender cluster is normally selected when it is for use on the DSK background bus. AUX buses 1/2 are able to receive M/E, PGM and PVW video signal.

The external key dedicated bus is used for external key source selection. Input video to this bus is separate from those to the versatile video signal buses and can be selected from 1 - 6 external key inputs.

1.3 Signal Path

Video signal paths are shown in the following diagram.

M/E sender, DSK sender and Fade-out

Fig. 1-1
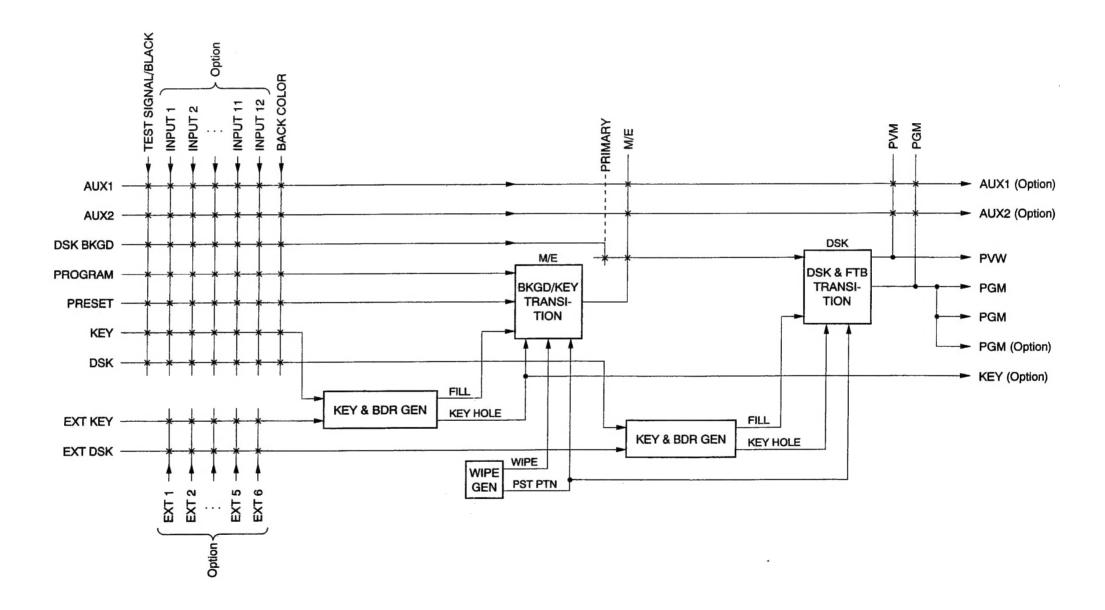
1.4 Special Effects Available

The KM-5000 offers special effects that can be applied to input video signals at each of the M/E sender, DSK sender, and Fade-out clusters.

1.4.1 Special Effects at the M/E Sender Cluster

Effects are available for the program background bus, the preset background bus, and the key bus. Video on the program bus, which is usually output to the primary line, can be switched with the preset bus video using such effects as wipe and mix, or can be keyed with the key bus video.

Refer to the later description for keying.

Transition

Switching and keying in/out operations are referred to as transitions. Video switching between program and preset backgrounds is called a **BACKGROUND TRANSITION** and keying in/out operation a **KEY TRANSITION**. Transitions can be accomplished either manually using the fader lever or automatically.

Transition combination

Background transitions and key transitions can be performed separately or concurrently. Example of separate transition: a program bus video with a telop keyed in can be exchanged with a preset bus video with the telop holding on as it is.

Example of concurrent transition: a program bus video with a telop keyed in is regarded as one integral image, which can be switched with the preset bus video and vice versa.
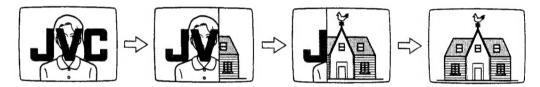
Fig. 1-2

Flip-flop operation

Background transition takes place with a flip-flop operation of the bus. Flip-flop operation refers to an automatic simultaneous switching between the program bus select button and the preset bus select button simultaneously as soon as the transition operation is complete.
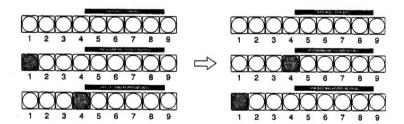
Fig. 1-3 Flip-flop operation

1.4.2 Effect at the DSK Sender Cluster

DSK stands for Down Stream Keyer. This is used to key to a video immediately before it is output to the primary bus line. With the KM-5000, the DSK effect is available for the video at the M/E sender cluster.

The KM-5000's DSK fucntions the same way as the key transition at the M/E sender cluster, except that keying in/out is only performed automatically.

1.4.3 Effect at the Fade-out Cluster

Fade-in/out of a primary bus video is available. Automatic operation only.

1.5 Keying Effects

Keying cuts out a portion of the video signal and fills the gap with a separate signal. The signal source being cut out is called a key source and the filling image a key fill.

The KM-5000 offers keying at the M/E sender and DSK sender clusters. Keying facilities at the M/E and DSK senders are equal to each other. When keying is carried out at both senders simultaneously, the video keyed at the M/E sender is hidden beneath the signal at the DSK, i.e., the DSK sender takes priority over the M/E sender. The KM-5000 allows you to make it appear as if the priority has been reversed by switching the keying settings between the M/E and the DSK.

The keying facilities available with the KM-5000 are outlined below.

External key

Keying with the luminance component of an external key input as the key source. An external key input module is optionally available.

Luminance key

Keying with the luminance component of the key bus or DSK bus video as the key source.

Chroma key

Keying with the chroma component of the key bus or DSK bus video as the key source.

Preset Pattern key

Keying with a fixed-size dedicated wipe pattern as the key source.

Fill color

A desired color signal, instead of the key source itself, can be used as a key fill.

Border

The key fill can be trimmed with a border, drop shadow, or outline.

Masking

An unnecessary part of a key source can be masked. The masking pattern is the shape of a box frame whose size and position can be freely adjusted.

B/W (monochrome) effect and spot effect

When the key source itself is used as a key fill, the B/W effect and the spot effect are available. The former makes the key fill signal black/white and the latter reduces the key fill video signal level by half.

Key memory

Keying setting can be done separately for each input, and independently on the key bus and DSK bus. Setting data remains stored in the KM-5000's memory even when the power is off. There is no need to re-set the unit each time the power is turned on.

Key exchange

Keying priority looks as if reversed by exchanging the key settings between M/E and DSK. Key exchange can be done also with GPI to be later described.

Key looping

A dedicated output for the key source processed at the M/E sender is optionally available. This makes possible sophisticated video processing without using an external routing switcher. For example, the key source output can be processed at the DVE together with the key fill selected at the AUX output and fed back to the KM-5000 for keying at the DSK.

1.6 Other Functions

Event memory

Control panel settings are stored in memory for later use. Up to 16 different settings can be stored in the main unit's memory. A memory battery is provided, ensuring that stored settings are held even when the power is off.

Color memory

Once set, the color setting is stored in memory for later use. 9 preset colors and 23 user-created colors are available. A memory battery is provided, ensuring that stored settings are held even when the power is off.

Wipe pattern effects

Effects applicable to wipe patterns include border, softness and aspect.

Independent 6-color signal generator

Color can be set independently for back color, key matte, DSK matte, key boarder color, DSK border color and wipe board color. Horizontal or vertical gradation can also be added to back color.

Fader limit function

During transitions at the M/E sender, transition progress can be stopped at any point.

Serial communications control

All the KM-5000's functions can be externally controlled via serial communications, for instance with a video editor or a personal computer. Two input terminals are provided for connection of external control units.
The communciations protocol used by the KM-5000 is compatible with the Grass Valley Group's Model 100 protocol used by many video editors.

Audio interface

The KM-5000 can be used with the JVC audio mixer MI-3000 via the JVC auto fader MI-F30.

GPI function

The KM-5000 can be externally triggered to start automatic operation.

Tally output

Tally output terminals are provided.

Improper color signal prohibited

The levels of internally generated color signals are monitored to prohibit any color signal exceeding a predetermined level.

3 types of test signal

Three types of test signal are available.

3 types of wipe code system

In addition to the KM-5000's wipe codes, existing wipe codes for the JVC KM-3000 and Grass Valley Group's Model 100 can also be used when selecting wipe identification codes.

2. INSTALLATION

This chapter explains how to install the control unit and the main unit. Installation of optional input/output modules is also covered.

• The mounting screws required for installation are not provided as the type and number required depend on the console or rack you are using.

2.1 Installation of the Control Unit

Although the KM-5000P control unit is basically designed for table-top use, it can be easily mounted in an EIA-standard rack or control console without significant modification. Mount the unit referring to the dimensional diagrams.
The holes for installation screws are covered with rubber pads. Remove the pads and securely mount the control unit with the screws. Re-apply the rubber pads after installation.

■ Do not use the fader lever to lift the control unit. Doing so will damage the fader lever.

■ Use screws with a head diameter of 9 mm or less.

Screw mounting holes

Screw mounting holes
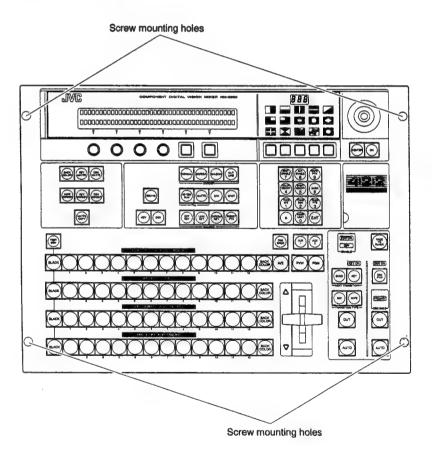
Fig. 2-1 Screw mounting holes

2.2 Main Unit Installation

Screw holes in the side panel of the KM-5000M main unit allow installation in an EIA 19" rack. Follow the procedures below for mounting.

(1) Remove the screws securing the four rubber feet at the bottom of the main unit. Remove the rubber feet.

(2) Secure the inner member of the slide rail to either side of the main unit.

(3) Secure the slide rail outer member to the rack (Refer to the slide rail's mounting instructions of the slide rail for details).

(4) Align the inner member at the main unit with the outer member on the rack and mount the main unit on the rack.

(5) Secure the main unit to the rack by fixing screws through the holes at the main unit main panel.

■ Accuride slide rails can be used. (Model C-305-20, Slide length 20")

■ Make sure that the rack is deep enough to leave room for wiring.

■ The use of a rack with fan-assisted heat dissipation capability is recommended.

Inner member

Screws (M4, 8 mm or less length)
8 in total for right and left sides

Rubber foot
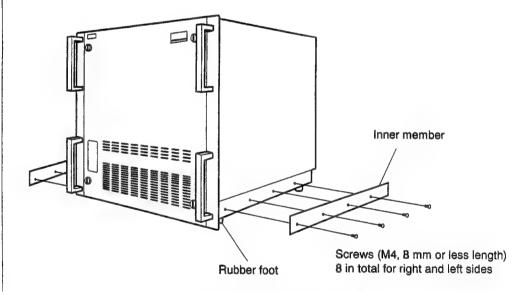
Fig. 2-2 Mounting of the inner member
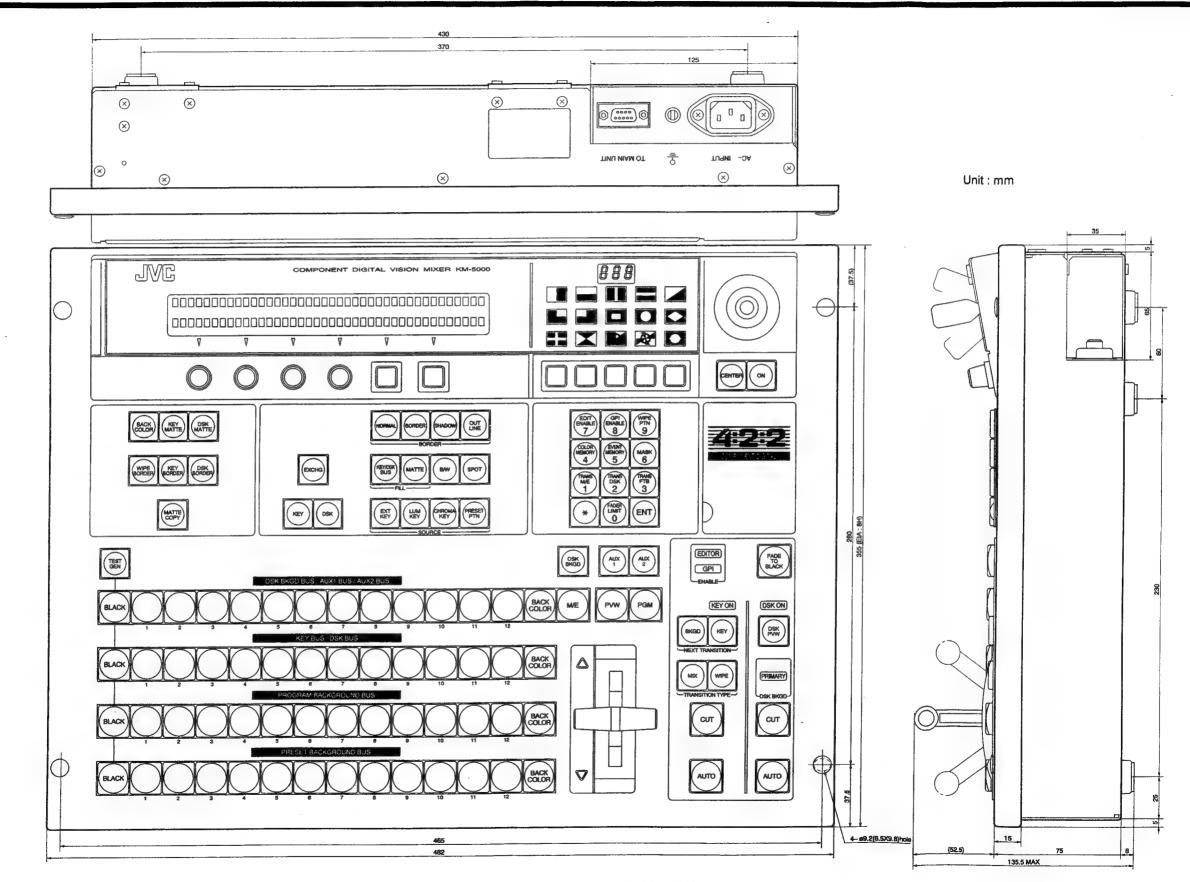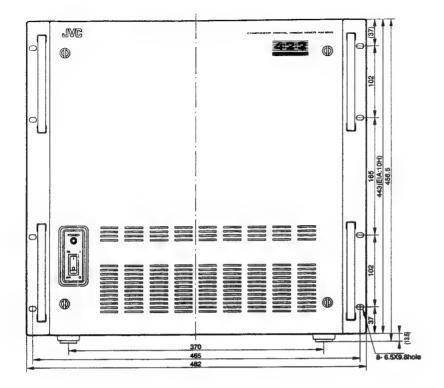
Fig. 2-3 Dimensional diagrams for control unit installation

Unit : mm
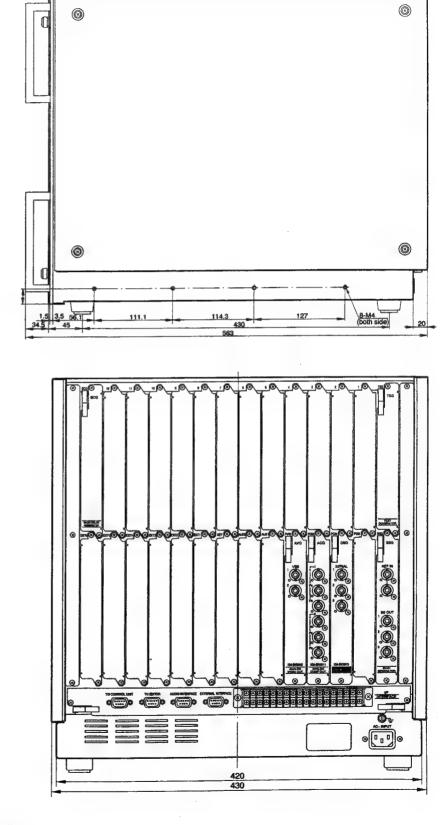
Fig. 2-4 Dimensional diagrams for main unit installation

2-5   2-6

2.3 Installation of the Optional Input/Output Modules

Which of the optional input/output modules can or cannot be installed depends on the slot design. Refer to Chapter 3.2 before mounting.

(1) Remove the blank panel mounting screws at the rear of the main unit and remove the blank panel.

■ The screws removed are no longer required

(2) Install the optional module along the guide rail.

■ Be sure that the main unit's power is off during installation, otherwise the optional module may suffer electrical damage.

(3) Secure the optional module with the fixing screws.

Screws

Fixing Screws

(1)   (2)
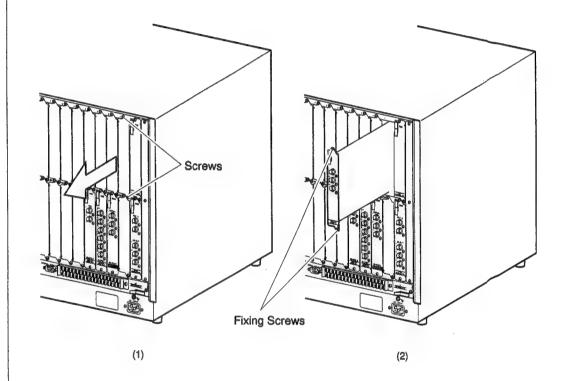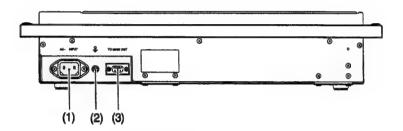
Fig. 2-5 Optional module installation

3. CONNECTIONS

This chapter explains how to connect the KM-5000 to external units. Connector panels of control and main units and optional I/O modules will also be described in detail.

3.1 Control Unit KM-5000P Rear Panel

Fig. 3.1 Control unit rear panel

(1) AC power supply connector *[AC ~ INPUT]*
Receives power through an applicable commercial AC outlet via the provided AC power cable.

(2) Ground terminal
System ground terminal. Usually there is no need for a ground connection. When using the machine in a place subject to excessive electrical power noise, connect this to the ground terminal of an assembly rack or console.

(3) Main unit connector *[TO MAIN UNIT]*
Connect to the main unit via the provided cable.

3.2 KM-5000M Main Unit Rear Panel

Below is the rear view of the main unit as seen under normal use.

■ The shaded part is the blank panel. With some systems, the optional I/O module is already mounted here.
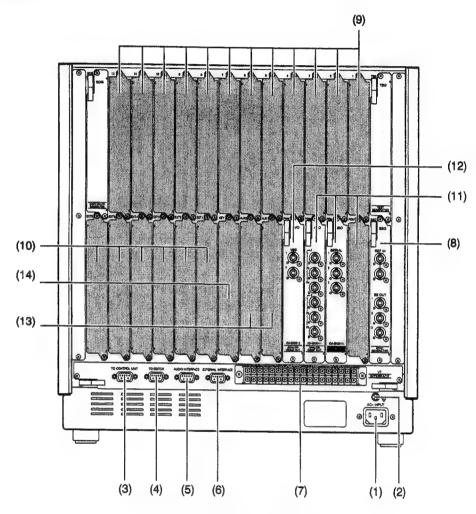
Fig. 3-2 Main unit rear panel

(1) AC power supply connector **[AC ~ INPUT]**
Receives power from a standard commercial outlet via the provided AC power cable.

(2) Ground terminal
System ground terminal. Usually there is no need for a ground connection. When using the machine where there is excessive electrical power noise, connect this to the ground terminal of an assembly rack or console.

(3) Control unit connector **[TO CONTROL UNIT]**
Connect to the control unit via the provided cable.

(4) Video editor connector **[TO EDITOR]**
Connect to a video editor. Connector cable is not provided.

(5) Audio interface connector **[AUDIO INTERFACE]**
Connect to the separately available JVC auto fader MI-F30. Connection cable is provided with MI-F30.

(6) External unit connector **[EXTERNAL INTERFACE]**
Connect external units such as personal computers. Connection cable is not provided.

(7) GPI input and tally output terminal base

The terminal base consists of the terminals for connection to GPI-compatible units and tally signal output terminals. Refer to 3.6 for detail.

(8) SSG module *[SSG - SYNC GENERATOR]*

Sync signal input/output connectors are provided.

- **[REF IN]** : BNC-type connectors for input of external sync reference signals. The composite video signal or black burst signal can serve as a reference sync signal. Either of the two connectors can be used as a loop-through output. If not used for loop-through, connect the provided 75-ohm termination plug.
- **[BB OUT]**: BNC type connectors for output of a reference sync signal (black burst) to an external unit. Three connectors are provided.

  If a reference sync signal is received by the [REF IN] connector, a signal in sync with the reference signal is delivered through this connector.

(9) Primary input slots *[1-12]*

Optional input modules can be installed in these slots to feed input signals to the versatile video buses. Inputs 1 through 12 are available and can be used with the modules listed below.

Table 3-1 Modules compatible with the primary input slots

Name	Model No.
Analog component input module	KM-BK5001
Analog composite input module	KM-BK5002
Serial digital input module	KM-BK5003
Parallel digital input module	KM-BK5004

(10) External key input slots *[EXT1-EXT6]*

Optional input modules can be installed in these slots to feed input signals to the external key dedicated buses. Inputs 1 through 6 are available and can be used with the modules listed listed below.

Table 3-2 Modules compatible with the external key input slots

Name	Model No.
Analog component input module	KM-BK5001
Analog composite input module	KM-BK5002
Serial digital input module	KM-BK5003
Parallel digital input module	KM-BK5004
Analog key input module	KM-BK5005

(11) Program video output slots [PGM]

Optional output modules can be installed in these slots to feed program video signals to monitors and VTRs. Of these, one is connected to the KM-BK5013 serial digital output module and one to the KM-BK5011 analog component output module as standard equipment. Other connectable models are given below.

Table 3-3 Modules connectable with the program video output slots

Name	Model No.
Analog component output module	KM-BK5011
Analog composite output module	KM-BK5012
Serial digital output module	KM-BK5013
Parallel digital output module	KM-BK5014

(12) Preview video output slot [PVW]

Sends a preview video signal to a monitor or VTR. The analog composite KM-BK5012 output module is connected as standard equipment. Other optional output modules (see table 3-3) can be connected depending on the system you're using.

(13) AUX bus video output slots [AUX1, AUX2]

An optional output module can be installed in the slot to feed the video signal selected on the AUX 1/2 buses. Any of the optional output modules listed in table 3-3 can be connected.

(14) Key signal output slot [KEY]

An optional output module can be installed in the slot to feed a key signal to an external special effects generator. The optional output modules listed below can be connected.

Table 3-4 Modules connectable to the key signal output slots

Name	Model No.
Analog component output module	KM-BK5011
Analog composite output module	KM-BK5012
Serial digital output module	KM-BK5013
Parallel digital output module	KM-BK5014
Analog key output module	KM-BK5015

3.3 Connector Location of the Optional Input/Output Modules

| 3.3.1 | Analog component input module KM-BK5001 |

To receive an analog component signal. BNC type connectors.

- **[Y]**   To receive a Y signal
- **[P_B]**   To receive a B-Y signal
- **[P_R]**   To receive a R-Y signal

Fig. 3-3 KM-BK5001

| 3.3.2 | Analog composite input module KM-BK5002 |

To receive an analog composite signal. BNC type connectors.

- **[VBS]**   To receive an analog composite signal

■ Internal processing delays the phase by two lines vis-a-vis other input modules.

Fig. 3-4 KM-BK5002

3.3.3 | Serial digital input module KM-BK5003

To receive a CCIR-656 serial digital signal (270 MHz)
Connector is BNC type.

• **[SERIAL]**   To receive a serial digital signal

Fig. 3-5 KM-BK5003

3.3.4 | Parallel digital input module KM-BK5004

To receive a CCIR-656 parallel digital signal
Connector is of D-SUB 25P type.

• **[PARALLEL]**   To receive a parallel digital signal

Fig. 3-6 KM-BK5004

3.3.5 | Analog key input module KM-BK5005

To receive an external key source signal. BNC type connectors.
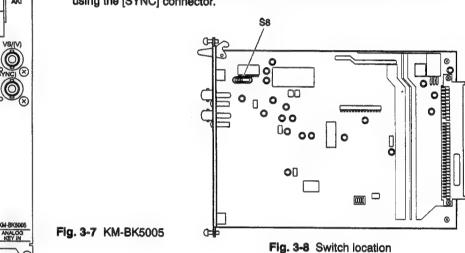
- **[VS/(V)]**   This connector usually receives a video signal with a 1.0 Vp-p sync signal. Composite signals cannot be input.
    Some connected external units may separately output a video signal without sync signal and sync signal. In that case, feed a 0.7 Vp-p video signal without sync signal to this connector and a sync signal to the **[SYNC]** connector.

- **[(SYNC)]**   This connector is not usually used. Only when a video signal without sync signal is input to the **[VS/(V)]** connector, a sync signal in sync with the video signal is fed to this connector. Sync signals with signal levels between 0.3 and 4 Vp-p can be input. Slide switch S8 on the PCB must be changed to EXT position when using the [SYNC] connector.

Fig. 3-7 KM-BK5005

Fig. 3-8 Switch location

3.3.6 | Analog component output module KM-BK5011

To output an analog component signal. BNC type connectors. Two output lines are provided.

- **[Y]**   To output a Y signal
- **[P$_B$]**   To output a B-Y signal
- **[P$_R$]**   To output a R-Y signal
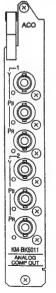
Fig. 3-9 KM-BK5011

| 3.3.7 | Analog composite output module KM-BK5012 |

To output an analog composite signal. Two BNC type connectors are provided.

- **[VBS]**   To output an analog composite signal

Fig. 3-10 KM-BK5012

| 3.3.8 | Serial digital output module KM-BK5013 |

To output a CCIR-656 serial digital signal (270 MHz). Three BNC type connectors are provided.

- **[SERIAL]**   To output a serial digital signal

Fig. 3-11 KM-BK5013

3.3.9 Parallel digital output module KM-BK5014

To output a CCIR-656 parallel digital signal. Two D-SUB 25P type connectors are provided.

- **[PARALLEL]**   To output a parallel digital signal

Fig. 3-12 KM-BK5014

3.3.10 Analog key output module KM-BK5015

To output a key source signal processed inside the KM-5000.
BNC type connector is provided. A key source signal is continuously output even when not used on the program video.

- **[VS]**   To output a key source signal with video signal level 0.7 Vp-p and sync signal level 0.3 Vp-p.

Fig. 3-13 KM-BK5015

3.4 Connecting the Main and Control Units

Use the provided cable.

■ The provided connection cable is 10 m long. If extending the cable make sure that total cable length does not exceed 100 m. Cable extension longer than this may result in operation errors.

Rear panel of control unit

(1) Plug in

(2) Secure the plug with these screws.

Conection cable (10m, supplied as accessory)

Rear panel of main unit
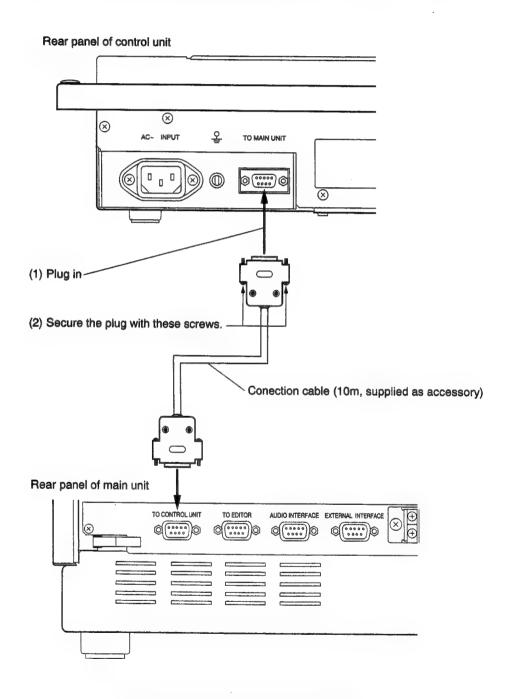
Fig. 3-14 Control unit / main unit connection

3.5 Connection to Video Units

Connection to external video units such as a VCR, a monitor, a digital video effects generator, or a telopper is discussed below with reference to specific examples.

3.5.1 Connection to monitors

Summary

- On-air signals are viewed on a component monitor.
- Preview video signals are viewed on the composite monitor.
- Signals at a specific input are monitored on the AUX 1 bus.

■ Perform color matching between different monitors in accordance with the monitor instruction manuals.

Connect an output module KM-BK5012
(optional) to the AUX-1 slot.
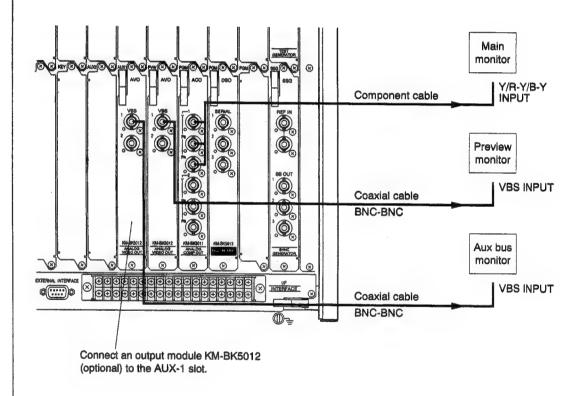
Fig. 3-15 Connection of monitors

| 3.5.2 | **VCR connection for AB roll editing** |

Summary

- A D1 format (parallel) VCR is connected to input 1 as player A.
- A MII format VCR is connected to input 2 as player B.
- The D1 format (serial) is used for recorder.
- Play back the video signal from the recorder on a monitor connected directly to the VCR.
- The house sync signal is used as a sync signal for each VCR. Feed the house sync to the KM-5000, as well.

■ Perform color matching between the VCRs according to the instruction manual of the VCR.
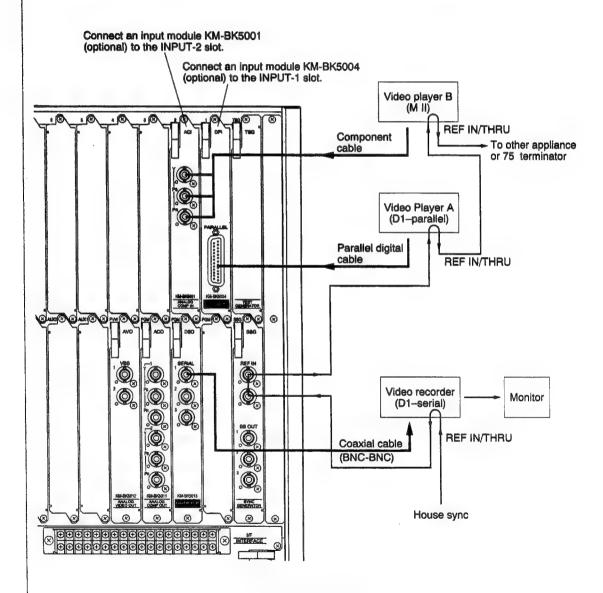
Fig. 3-16 VCR connection

3.5.3 | **Connection of a chroma key dedicated camera**

Summary

- A camera is connected to input 3. The camera video signal will be used as a chroma key source signal.
- Feed the KM-5000 tally signal to the camera.
- The house sync is used as a sync signal for the camera. Feed the house sync to the KM-5000, as well.

■ The VCR video signal may be used as a chroma key source signal.

■ Chroma key can be applied to both the M/E output and DSK output sections.
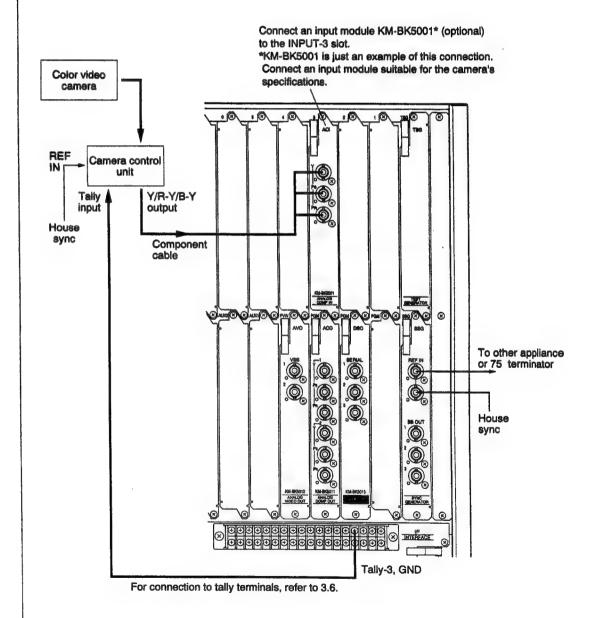
Fig. 3-17 Camera connection

CONNECTIONS

3.5.4 **Telopper connection**

Summary

- The telop created by the telopper is keyed to the program video signal.
- The telopper character output is fed to input 4 to serve as a key fill.
- The telopper edge output is fed to the external key input slot (EXT) to serve as a key source.
- The house sync is used as a sync signal for the telopper. Feed the house sync signal to the KM-5000 as well.

■ If the telopper has no edge output, the character output received as a key fill can be used as a key source. In this case, the external key input slot is not used.

■ Keying can be applied to both the M/E output and DSK output sections.

REF input

Telopper

Sync output

House sync

Character output

Coaxial cable

Edge output

Coaxial cable

Coaxial cable

This connection is generally unnecessary except for some kinds of teloppers. For detail, refer to 3.3.5.

Connect an input module KM-BK5002* (optional) to the INPUT-4 slot.
*KM-BK5002 is just an example of this connection. Connect an input module suitable for the telopper's specifications.

To other appliance or 75 terminator

House sync

Connect an input module KM-BK5005* (optional) to the EXT-1 slot.
*KM-BK5005 is just an example of this connection. Connect an input module suitable for the telopper's specifications.

Fig. 3-18 Telopper connection

| 3.5.5 | **Connection to a digital video effecter (DVE) (1)** |

Summary

- The video signal selected on the KM-5000 AUX2 bus is processed at the DVE.
- The video signal thus processed is returned to the KM-5000 together with the DVE key output.
- The DVE key output is received by the external key input slot (EXT2).
- The video returned is keyed to the program video at the M/E output or DSK output section.
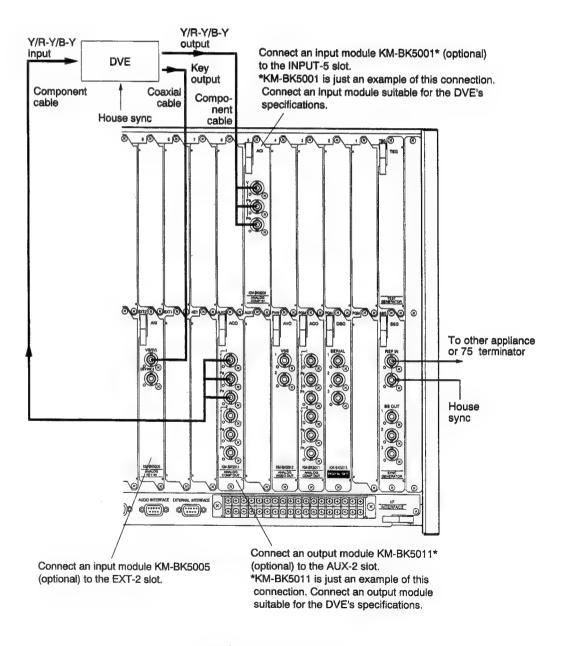
Fig. 3-19 Connection of DVE (1)

CONNECTIONS

3.5.6 Connection to a digital video effecter (DVE) (2)

Summary

- Flying key is carried out using the key output from KM-5000.
- As with the telopper connection, the telop created at the telopper is used as a key source.
- A telopper video signal is selected on the key bus, and keying is set at the M/E output section.
- After setting, the key source is fed to the DVE key input when delivered to the key bus output.
- A telopper video signal is selected on the AUX 2 bus and is fed to the DVE video input.
- With an effect such as size compression is applied at the DVE, the video signal affected is returned to the KM-5000 and keyed to the program video.

■ Since the key bus output is used in this example, keying cannot be used at the M/E output section.
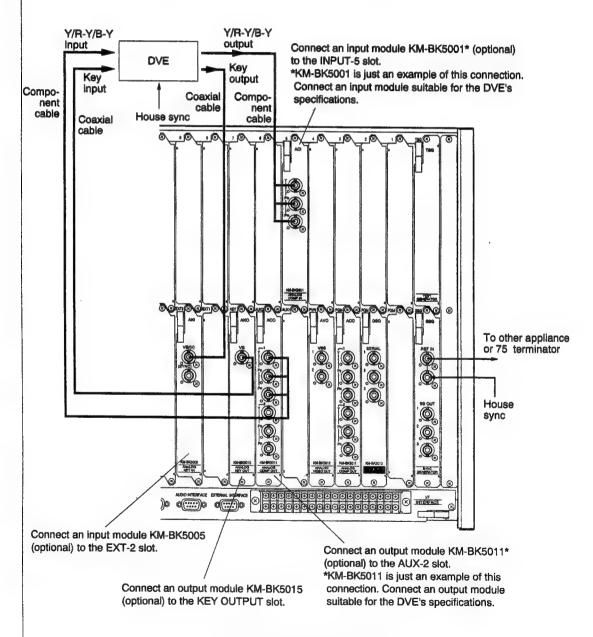
Fig. 3-20 DVE connection (2)

3.5.7 | Notes regarding DVE connection

■ In the connection examples 3.5.5 and 3.5.6, images generated by the KM-5000's M/E sender can be processed by the DVE when M/E is selected on the AUX bus. To avoid problems, however, be sure that M/E is not selected on the DSK BKGD bus. If the DSK is applied using the normal setting, the M/E signal returned from the DVE will be combined with the original M/E signal. The figure below shows the flow of the M/E signal in connection example 3.5.6 with INPUT 12 selected on the DSK BKGD bus.
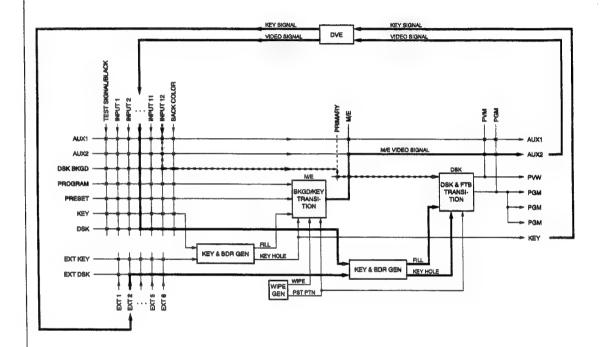
Fig. 3-21 M/E video signal flow

3.5.8 Sync signal distribution

Summary

- Sync signals from the KM-5000 are distributed among the video units to bring them into sync with KM-5000.

— 75Ω termination plug

— House sync

To the sync signal input connector of externally connected appliances such as VCR, telopper, etc.
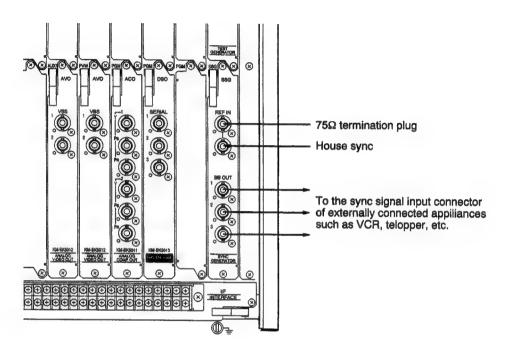
Fig. 3-22 Sync signal distribution

3.6 GPI and tally connection

3.6.1 | Connection procedures

(1) Fully loosen the terminal base fixing screws at the main unit rear panel and remove the terminal base.

(2) Connect control leads from GPI and tally to the terminal base. (Refer to 3.6.2 and 3.6.3.)

(3) Mount the terminal base on the main unit and secure with screws.

■ Do not wire the GPI or tally connection cable near strong noise sources as this may cause the GPI to malfunction.
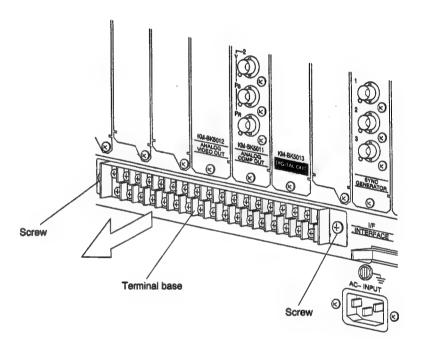
Fig. 3-23 Removal of the terminal base

3.6.2	**GPI terminals**

Some KM-5000 effects can be generated by making contact with the following terminals.

- **[M/E]**   Provides the same effect as pressing the AUTO button at the M/E output
- **[DSK]**   Provides the same effect as pressing the AUTO button at the DSK output
- **[FTB]**   Provides the same effect as pressing the FTB button
- **[SEL]**   Any one of the four effects can be generated by setting on the control display. (See chapter 5.4.9)
- **[GND]**   GND side of the contact

■ The [SEL] terminal is useful when connecting an external unit that doesn't have multiple GPI outputs.

■ When using a switch for making contact, be sure to use a momentary-type switch. Keep chattering of the switch to less than 10 msec to avoid operation errors.
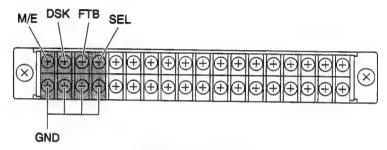
Fig. 3-24 GPI terminals

3.6.3	**Tally terminals**

The tally signal informs the camera or a similar unit whether or not its video signal is currently in use for the primary video bus.

- **[1-12]**   Tally outputs corresponding to inputs 1 through 12. Usually provide a make contact. Maximum current to flow into the make contact is 1 A.
- **[COMMON]**   Common terminal for the tally outputs **[1-12]**
- **[MODE] [GND]**   Tally enters the voltage supply mode when **[MODE]** is connected to **[GND]**.

■ Maximum current to flow into the contact in the make contact mode is 1 A. Current exceeding this level will damage the KM-5000's internal circuits.

■ The voltage supply mode provides DC 5 V Max. 8 mA (output impedance 120Ω).
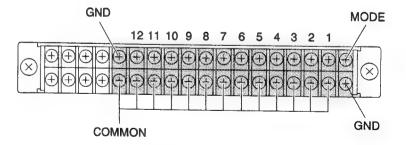
Fig. 3-25 Tally terminals

3.7 Connection to a video editing controller

The KM-5000 can be controlled via a video editing controllor. The protocol used is the SMPTE Rp.113 subset — which is compatible with the GVG Model 100 and the JVC KM-3000.

- Supply your own connection cable.
- Consult your nearest authorized JVC dealer to find out which editors are connectable to the KM-5000.
- The KM-5000's internal switches must be set to match the communications format and protocol. See chapter 7 for details.
- Some functions may not be available depending on the type of editor. Consult your JVC dealer for details.
- The communications hardware basically conforms to the RS-422 format, but can also be made compatible with RS-232C. See chapter 7 for details.
- When the [EDITOR] lamp on the control panel is off, operations cannot be controlled from the video editor. (See Chapter 5.3.10)

From a video editor

(2) Secure the plug with these screws.

(1) Plug in.

Rear panel of KM-5000
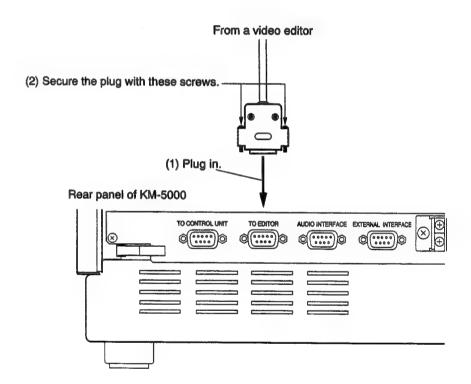
Fig. 3-26 Video editor connection

3.8 Connection to Audio Interface

The JVC audio mixer MI-3000 can be operated in conjunction with the KM-5000 by connecting the JVC MI-F30 auto fader .

- Connection cable is provided with the MI-F30.
- Refer to the MI-F30's instruction manual for details on connecting the MI-F30 to the MI-3000.
- The MI-F30's internal switches must be changed to a different setting. See chapter 7 for details.
- Do not use the MI-F30 GPI terminals and the KM-5000 GPI terminals at the same time. Since the KM-5000 sends a corresponding command to the MI-F30 as soon as it receives a GPI trigger, connecting both sets of terminals will result in an operation failure.

KM-5000 main unit rear panel   MI-F30 rear panel

(2) Secure the plug with these screws.

(1) Plug in.

Rear panel of KM-5000
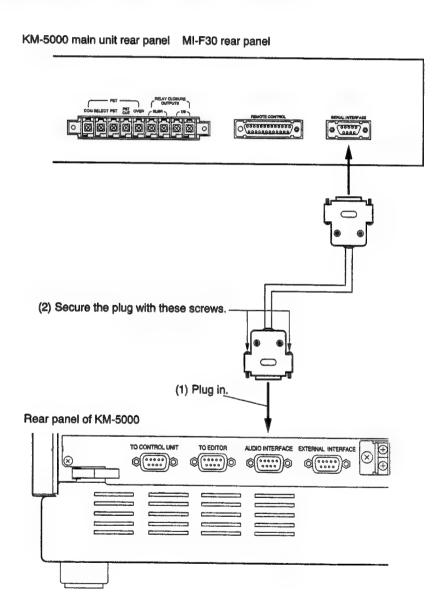
Fig. 3-27 Connection to the audio interface

Corresponding KM-5000 and MI-F30 functions and settings are listed below.

Table 3-5 List of KM-5000 and MI-F30 corresponding functions

Functions and settings KM-5000	Functions and setting MI-F30	Remarks
PROGRAM BACKGROUND BUS	PROGRAM BUS	The MI-F30's bus button is turned off when BLACK or 6 or higher-number input is selected at KM-5000.
PRESET BACKGROUND BUS	PRESET BUS	
DSK BUS	OVER BUS	
M/E CUT	PST CUT	Corresponds only to background transition at KM-5000. When a key transition is performed, selected buses do not coincide with those at MI-F30.
M/E AUTO	PST TARNS	
DSK CUT	CUT operation at OVER bus	No corresponding button on MI-F30, but proper operation takes place. CUT operation at OVER bus does not interlock with KEY EXCHG function at KM-5000.
DSK AUTO	OVER TRANS	Input operation at OVER bus does not interlock with KEY EXCHG function at KM-5000.
TRANS M/E (Duration time)	PST TRANS	
TRANS DSK (Duration time)	OVER TRANS	
TRANS FTB (Duration time)	Fade out	No corresponding display at MI-F30, but proper function takes place.
EVENT MEMORY READ/STORE	MEMORY READ/STORE	The MI-F30's memory No. will correspond to the KM-5000's memory No. less 1

■ The MI-F30 is not compatible with manual operation of the KM-5000's fader lever.

■ Likewise, the MI-F30 is not compatible with the KM-5000's fader limit function.

■ The MI-F30 interlocks even when the KM-5000's functions as listed on Table 3-5 are externally controlled from a video editor or similar unit.

■ If the video editor is not compatible with DSK, use it in conjunction with the GPI outputs.

3.9 Connection of Personal Computers

The KM-5000 has another connector for connection with an external control unit. A computer connected to this connector is able to control all the functions of the KM-5000.
While all protocol and hardware details are the same as when connected to a video editor, the data can be set independently of the video editor.

■ Consult your JVC dealer for protocol and hardware setting.

■ You must supply your own connection cable.

4. INITIAL SETTINGS

4.1 Color Matching Connected Units

Video equipment such as VCRs require preliminary adjustment to compensate for color differences. Color bar signals from the KM-5000's built-in color bar generator can be used for adjustment.
Adjustment procedures are discussed below using a VCR connection as an example.

(1) Record KM-5000 color bar signals on a video tape.

(2) Select color bar on the KM-5000 program bus.

(3) Play back the tape (1) on the VCR and select this signal on the preset bus.

(4) Execute background transition with the wipe �merged. Move the fader lever and stop the lever around the middle of the stroke.

(5) Adjust the VCR so that the levels of the upper and lower color bar signals are coincident with each other.

■ Perform adjustment in the same way for other VCRs.

■ For more details, refer to the VCR instruction manual.

■ Specific measuring equipment is required for more precise adjustment. Consult your JVC dealer for details.

4.2 Phase Adjustment

Since the KM-5000 incorporates an automatic phase adjuster, phase adjustment of input video signals is unnecessary.

Phase adjustment may be necessary in some cases; for instance, when the output video signal from the KM-5000 is fed to another system receiving the same sync signal as the KM-5000. In this case, the horizontal phases of the KM-5000 sync signal and the video signal output can be finely adjusted with respect to a reference signal. Consult your JVC dealer for details.

5. OPERATIONS

5.1 Power on

The main unit power switch is on the front panel.
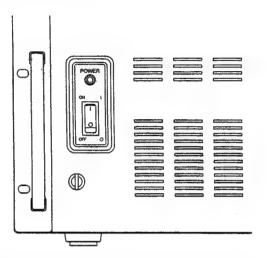
Fig. 5-1 Location of the main unit power switch

The control unit power switch is inside the unit.

Open the lid
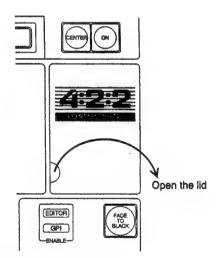
Fig. 5-2 Location of the control unit power switch

- Power can be turned on first at either the main unit or the control unit.
- Once both units have been turned on, the main unit initiates communications with the control unit. Initial communications take 3 — 4 seconds, during which time neither unit will perform any other operations. Initial communications may occasionally take as long as 15 seconds, depending on communication conditions and/or power-on timing. This does not indicate any failure or malfunction in the units.
- If the power is turned on again at either of the units during operation, initial communications start again.

5.2 Overview of the Control Panel

5.2.1 Control Clusters

The panel controls are generally clustered as follows.

(1) Power switch (Inside the lid)   : Turns the power on and off.

(2) Control display   : Performs and displays the settings.

(3) Crosspoint select cluster   : Allocates the video signals input to the KM-5000 to the individual buses.

(4) M/E sender cluster   : Performs transitions with the three buses, program background bus, preset background bus and key bus.

(5) DSK sender cluster   : Delivers the DSK effect to the on-air line.

(6) Fade-out cluster   : Fades the on-air video in and out.

(7) Wipe pattern select cluster   : Selects a wipe pattern to be used for transitions and preset pattern keying.

(8) Color select cluster   : Sets colors to be used for each effect.

(9) Key/DSK setting cluster   : Sets the keying at the M/E sender and DSK sender clusters.

(10) Multi-purpose key cluster   : Used for different purposes: to display settings, enter values, and to turn various functions on and off.

(11) External control acceptability   : Indicates whether or not an external control is acceptable.
     indicators
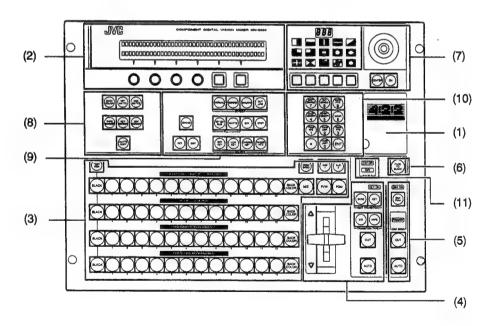
Fig. 5-3 Control clusters

5.2.2 | **There are numerous buttons on the control panel.**

These are grouped into a number of different operations.

First of all, there are two major types of buttons, (1) those that directly initiate a KM-5000 operation and (2) those that do not cause a KM-5000 operation. When the buttons (1) are pressed, they light up as soon as their operation is accepted by the main unit. The main unit responds immediately to button operation. While some of the main unit operations appear on the monitor screen, others are merely internal.

Most of the buttons are type (1). The type (2) buttons are

- Setting display indicator buttons

The other buttons are categorized as follows depending on the way they light up.
- Exclusively operating buttons   : In a cluster of buttons, only the pressed button lights, leaving the other buttons off.
- Toggle buttons   : Can be turned on and off separately from each other.
- Buttons that work simultaneously : Usually serving as exclusive buttons, these buttons can function together when pressed.

The exact functions and operations of each button will be explained in the relevant part of the text.

5.2.3 | **Entry of numerical values**

When setting special effects on the KM-5000, the setting parameters may sometimes have to be entered in numerical form. Entry of numerical values can be done in either of the following ways.

- Entry by turning the knob   : At the control display
- Ten keypad entry   : Multi-purpose key

Then-key entry is limited to the following parameters.

- Automatic operation time for M/E, DSK and Fade-out transitions.
- Wipe number
- Color memory number
- Event memory number

When the knob is turned, the main unit immediately responds to the setting values entered. This enables you to continuously check the change in values on the display.

When using the ten key pad, the main unit will respond when you press the ENT key after entering a number. This means discrete numbers can be entered at one time.

For this reason, the knob is used when variation in setting values may appear on the monitor screen, while the ten key pad is used when variations need to be kept off the display.

5.3 Names and Operations of the Front Panel Controls

5.3.1 | Control Display

Changes and displays the various settings. Also shows warning messages. This part of the control panel consists of a 40-character, 2-line display, four rotary encoder knobs, and two push buttons.

The display responds to operation of the control panel by indicating the functions assigned to the knobs and buttons and the numerical values selected. There is no display of functions and numerical values for knobs and buttons not in use.

The knobs are all mounted on rotary encoders, so that control depends on the turning direction and not the actual position position of the knobs.

• Turning the knob clockwise increases the value or moves to the next setting item;
• Turning the knob counterclockwise decreases the value or moves to the preceding setting item.

The buttons are toggle type; each time a button is pressed the setting changes in sequence.

The figure shown in the top right the display is the ID number for the display frame on view. If the display is divided into more than one sections or has different versions for one setting, the ID number is shown with a sub-number (suffix).

Throughout the description below, the numerals beginning with # stand for an ID number with or without its sub-number: i.e., #20-1 stands for ID No. 20 and its sub No. 1.

See Chapter 5.4 for more details on the display.
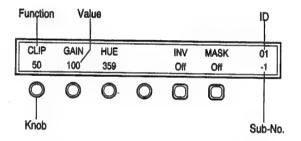
Fig. 5-4 Example of the control display

5.3.2 | Cross Point Select Cluster

Allocates video signals input to the KM-5000 to the seven versatile video buses.

Although the key bus and the DSK bus share an input select button, they are internally independent and receive input video separately.

Likewise, the AUX bus 1, the AUX bus 2 and the DSK background bus share an input select button but are internally independent from one another.

The desired video source can be selected from any one of 12 inputs, as well as black (switchable to the built-in signal generator) and back color. However, sources cannot be selected at inputs with no input module or where the power is not turned on at the external unit connected to the input module.

The video signal from the M/E sender cluster is normally selected when it is for use on the DSK background bus. In addition to the M/E video output, PGM and PVW video output can be selected for the AUX 1/2 buses.

The selected input button on the KEY, DSK, PROGRAM and PRESET buses illuminates at two different degrees of brightness according to the situation; bright when the video at the selected input is being output from the primary bus, and dim when it is not being output.

When back color is selected on any bus, the color setting frame (#10-2) appears on the control display. At the same time, the BACK COLOR button in the color setting cluster automatically turns on. This forces the MATT COPY button to go off.
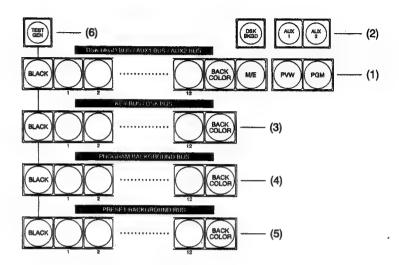
Fig. 5-5

(1) AUX buses/DSK background bus input select button *[DSK BKGD BUS] [AUX1 BUS] [AUX2 BUS]*

Selects the video signal to be input to the bus selected by button (2). PGM and PVW buttons cannot be selected on the DSK background bus.

(2) Bus assign button *[DSK BKGD] [AUX1] [AUX2]*
Assigns the button (1) to a bus selected from DSK BKGD, AUX1 and AUX2. The button pressed is illuminated, with the other two turned off. One of the buttons (1) is illuminated for the currently selected input on the bus assigned.

- *[DSK BKGD]*   Uses the button (1) as a DSK background bus select button

- *[AUX1]*   Uses the button (1) as an AUX1 bus select button

- *[AUX2]*   Uses the button (1) as an AUX2 bus select button

(3) Key bus/DSK bus input select button *[KEY BUS] [DSK BUS]*
Selects the video to be input to the key bus or DSK bus. Switching between the buses can be done by the key/DSK select buttons at the key/DSK setting cluster. With the key button selected at the cluster, the button (3) functions as a key bus select button. With the DSK button selected at the cluster, it serves as a DSK bus select button.

(4) Program bus input select button *[PROGRAM BKGD BUS]*
Selects the video to be input to the program bus.

(5) Preset bus input select button *[PRESET BKGD BUS]*
Selects the video to be input to the preset bus.

(6) Black signal/test signal switching button *[TEST GEN]*
Selects the black signal input in conjunction with the BLACK button on any set of bus select buttons. The black signal is sent to the bus selected when TEST GEN button is extinguished. With the button pressed, it is illuminated to allow the signal from the built-in test signal generator to be input to the bus. The control display shows a set of settings (#20), from which a desired type of test signal can be selected.

| 5.3.3 | M/E Sender Cluster |

Performs transitions on three buses: program background bus, preset background bus, and key bus. The video signal on the program bus, usually on air at the program output, can be exchanged with the video signal on the preset bus by means of the wipe or mix effect. It can also receive a video source from the key bus for keying.
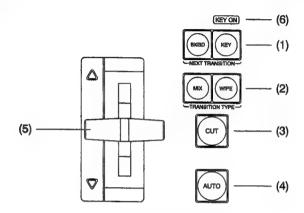
Fig. 5-6 M/E sender cluster

(1) Next-transition select buttons *[BKGD] [KEY]*
Whichever button is pressed lights; the other goes off. Both buttons light when pressed simultaneously. It is not possible to turn off both buttons at the same time.
When this button is pressed with the fader lever positioned midway or while automatic transition is taking place,the transition selected immediately before the button was pressed is cancelled and replaced with the newly selected transition.

- *[BKGD]* only illuminated : Background transition to take place as next transition.

- *[KEY]* only illuminated : Key transition to take place as next transition. Pressing this button calls up the key/DSK setting menu (#01-1/2/3) on the control display.

- Both illuminated : Background transition and key transition to take place simultaenously.

(2) Effect select buttons *[MIX] [WIPE]*
Press to select the type of transition (effect). Only one effect can be selected at a time. Whichever button is pressed will light while the other remains unlit.

- *[MIX]* Transition to be performed using the mix effect

- *[WIPE]* Transition to be performed using the wipe effect. Pressing this button calls up the wipe setting menu (#30-1) on the control display.

(3) Cut button *[CUT]*
When this button is pressed, the transition takes place immediately.
Effect selection with the effect select buttons (2) is disabled when the CUT button is pressed.

(4) Auto button *[AUTO]*
Starts automatic transition. Transition is executed at the preset length of time. Transition time setting is performed using the multi-purpose key cluster (see 5.3.9) and the control display (#40). The light in the button flickers during automatic operation.

■ Pressing this button during automatic operation brings the transition to a pause. Operation resumes when the button is pressed again.

■ If the CUT button (3) is pressed during automatic operation, transition takes place immediately and automatic operation ends.

■ If the fader lever (5) is moved during automatic opration, automatic operation is cancelled if the fader lever is moved beyond the progress by automatic operation. Manual operation with the fader lever then continues.

(5) Fader lever

Transition is executed in response to the movement of the fader lever. The lever moves from the top or the bottom to the opposite end, i.e., over a stroke defined by the upper and lower limits. The transition is complete when the lever runs through one stroke.

The actual direction that the lever moves does not affect the transition. The transition begins when movement of the lever starts and ends when the lever has been moved all the way to the other end — regardless of whether movement is from top to bottom or bottom to top.

Two arrow-shaped LEDs next to the lever indicate the direction the lever should be moved to complete the stroke: the direction is indicated by the illuminated LED. Illumination of the two LEDs alternates each time a transition is completed.

If the fader limit mode is entered (at the multi-purpose key cluster; see 5.3.9), the directional LEDs will blink. However, stroke direction will still be indicated.

The fader directional LEDs light simultaneously when

- the lever is not set to a limit position when the power is turned on;

- the AUTO or CUT button is pressed at the M/E sender cluster with the lever positioned midway;

- a fader value is received from an external unit.

In these cases, lever operation remains invalid until moved to the upper or lower limit. As soon as the lever reaches either limit, the normal operation of the lever resumes and the appropriate LED will light.

If the CUT button (3) is pressed before the lever has completed its stroke, transition takes place instantly. The lever then remains invalid unless it is moved fully to either limit.

Likewise, when the AUTO button (4) is pressed before the lever has completed its stroke, automatic transition starts from the position where the lever stopped and goes to the end. Lever operation remains invalid until it is moved fully to either limit. The time left in the transition is calculated based on the assumption that the position where the lever stopped is a full stroke position.

(6) Key on/off indicator lamp [KEY ON]

The lamp lights when keying to the program line is taking place during or after a transition. If there is no keying, the lamp goes off.

5.3.4 DSK Sender Cluster

Outputs a DSK effect to the program line, i.e., applies additional keying to the program video signal created at the M/E sender cluster and puts it on air again. Unlike the M/E section, only the mix effect is available for transition. Manual operation is not possible either, with "cut" or "auto" operation only.

(1) DSK preview button [DSK PVW]

Press this button to view the DSK setting before airing. Pressing this button again turns the light off. The button automatically turns off when fade-out is executed.

(2) Cut button [CUT]

Press this button to instantly execute the DSK transition.

(3) Auto button [AUTO]

Press this button to execute the DSK transition at a preset duration. Set the transition using the multi-purpose key cluster (see 5.3.9) and the control display (#40 menu). The button blinks during operation.

■ Operation is reversed when this button is pressed during automatic operation. For instance, if transition is going toward ON, it is switched to OFF.

■ DSK transition instantly takes place when the CUT button (2) is pressed during automatic operation.
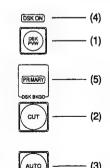
Fig. 5-7

(4) DSK on/off indicator lamp [DSK ON]

This lamp lights when the DSK effect is being applied to the on-air video signal during or after DSK transition. It goes off when there is no DSK effect.

(5) Program line warning lamp [PRIMARY]

This lamp shows the state of the program line. Though not essential under normal circumstances, this lamp is of critical importance when sophisticated effects such as key looping are being performed. Use it to confirm the state of the program line, otherwise the desired effect may not take place.

- Lamp OFF : Usually the lamp remains off. The video signal created at the M/E sender cluster is on air and the DSK effect may be applied to it.

- Lamp ON : The lamp lights when a video signal input other than those from the M/E section is selected on the DSK background bus. The video signal selected on the DSK background bus is now on air and the DSK effect may be applied to it. As long as this lamp is illuminated, confirmation of any operation associated with the M/E sender cluster is not possible, even if the DSK effect is not in use.

If the PRIMARY lamp is mistakenly illuminated, press the DSK BKGD button at the crosspoint select cluster and then select M/E with the DSK BKGD BUS button. The lamp will go off.

5.3.5 Fade-out Control

Applies a fade out/in to a video signal on the primary bus.

(1) Fade out/in button [FADE TO BLACK]

Press this button to execute the auto fade transition at a preset duration. Set the fade transition time using the multi-purpose key cluster (see 5.3.9) and the control display (menu #40). The button blinks during operation and lights when the transition is complete.

Pressing this button during auto fading reverses the operation, i.e. fade-out switches to fade-in and vice-versa.

Fig. 5-8 Fade-out control

5.3.6 | **Wipe Pattern Select Cluster**

To select the wipe pattern to be used in a transition. This is also used to set the wipe pattern for the preset pattern key as one of the keying effects.

Softness, aspect and other settings can be assigned to the wipe pattern selected. These characteristics can be set using the wipe setting menu (#30-1) on the control display. Press the WIPE PTN button in the multi-purpose key cluster or the WIPE button in the M/E cluster to call up the wipe settings menu.
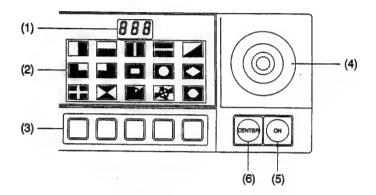
Fig. 5-9 Wipe pattern setting cluster

(1) Number indicator
Indicates the number assigned to the wipe pattern selected. This number can be used to select a wipe pattern on a video editor.

(2) Wipe pattern indicators
The symbol of the wipe pattern currently selected lights up. Wipe patterns other than those indicated here are also available. If a non-indicated wipe pattern is selected, the pattern number will be shown on the number indicator but none of the symbol indicators will light up.

(3) Wipe pattern select buttons
To select the wipe patterns indicated on the wipe pattern indicators (2). When a button is pressed, one of the symbols in the button's column will light up. The symbols light in sequence each time the button is pressed. Stop pressing the button once the desired wipe pattern symbol is illuminated. At the same time, the number assigned to the pattern selected appears on the number indicator (1).

Wipe patterns other than those indicated at (2) can be selected using the multi-purpose key cluster. (see 5.3.9) See the list in Chapter 6 for the wipe patterns available.

(4) Positioner stick
Moves the wipe pattern to the desired position. Stick operation is valid when the Positioner button (5) is illuminated. The positioner is center-biased, so that it automatically returns to its mechanical center when released during operation. The mechanical center does not affect wipe pattern position. Position depends on the orientation and inclination angle of the stick. The wipe pattern center moves in the direction in which the stick is inclined. The greater the angle, the faster the pattern moves during setting.

(5) Positioner ON/OFF button *[ON]*
Press this button when using the positioner stick (4). The button alternates between ON and OFF each time it is pressed. If turned off, the wipe pattern returns to its initial position. The position set by the positioner is retained in memory, however, and restored when the button is turned on again.

(6) Positioner center button *[CENTER]*
With this button pressed, the positon set and stored in memory by the positioner is cleared and the initial positon restored.

| 5.3.7 | **Color Select Cluster** |

To select color signals used in various parts of the KM-5000.

The KM-5000 has six built-in color signal generators, which can be operated independently of one another.

- Back color : Used as an input signal to each bus
- Key matte color : Used as a key fill
- DSK matte color : Used as a DSK fill
- Wipe border color : Used to trim the border of the wipe
- Key border color : Used as the border of keyed-in signal.
- DSK border color : Used as the border of keyed in signal.

Pressing the button for any desired setting calls up the color setting menu (#10-1/2) on the control display. Particular settings can be done with the knobs and buttons below the control display. The color setting menu is also called up when any button associated with color is pressed.
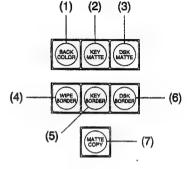
Fig. 5-10

Hue, saturation and luminance can be selected on the setting menu for each color. Gradation is also selectable for back color.

The color thus created can be stored in the color memory (see 5.4.10) and called up for later use. The matte copy facility enables you to reproduce the color at the touch of a button without using the color memory. For instance, back color can be copied to wipe border color.

(1) Back color setting & indicator button *[BACK COLOR]*
Press this button when changing the back color setting. The button lights. Menu item #10-2 also appears when the BACK COLOR button at the crosspoint select cluster (see 5.3.2) is pressed.

(2) Key matte color setting & indicator button *[KEY MATTE]*
Press this button to change the key matte color setting.

The button lights. Menu item #10-1 also appears when the MATTE button is pressed during key setting at the key/DSK setting cluster (see 5.3.8).

(3) DSK matte color setting & indicator button *[DSK MATTE]*
Press this button to change the DSK matte color setting.

The button lights. Menu item #10-1 also appears when the MATTE button is pressed during DSK setting at the key/DSK setting clusetr (see 5.3.8).

(4) Wipe border color setting & indicator button *[WIPE BORDER]*
Press this button to change the wipe border color setting. Menu item #10-1 will appear.

(5) Key border color setting & indicator button *[KEY BORDER]*
Press this button to change the key border color setting. Menu item #10-1 will appear.

(6) DSK border color setting & indicator button *[DSK BORDER]*
Press this button to change the DSK border color setting. Menu item #10-1 will appear.

(7) Matte copy button *[MATTE COPY]*
To copy color data from setting to another. Follow the steps below.

1) Select the copy source by pressing one of the color buttons (1) to (6).
2) Press MATTE COPY. The button blinks, indicating that the target color data is ready for selection.
3) Select the target color with the color buttons (1) to (6).

For instance, if the color data selected for back color is to be used for key border color, simply press **[BACK COLOR]**, **[MATTE COPY]** and **[KEY BORDER]** in that order.

The MATTE button goes off when copying is complete. If the button is pressed again before selecting the target color, the copy mode is cancelled and the button light goes off.

| 5.3.8 | Key/DSK Setting Cluster |

Used to perform settings associated with keying at the M/E sender cluster (see 5.3.3) and DSK at the DSK sender cluster (see 5.3.4). The values set for keying and DSK are stored in memory separately for each video signal input. Keying data and DSK data are also stored separately even when the input signal is the same.

Set values are stored in memory for the following ten items.

- Source seleced (types of key effects)
- Fill selected
- Clip level
- Gain
- Unity-gain ON/OFF
- Hue of chroma key
- External key input channel
- Source polarity (inverted / non-inverted)
- Mask setting
- Border setting

Keying data and DSK data for any of these items can be instantly exchanged with each other. Exchanging data makes setting priorities appear to be reversed.

Pressing any button in the key/DSK setting cluster automatically calls up the corresponding setting menu on the control display. Setting can be done with the knobs and buttons below the control display.
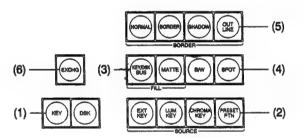
Fig. 5-11 Key/DSK setting cluster

(1) Key/DSK select buttons *[KEY] [DSK]*
Press the button corresponding to the desired setting. The button pressed lights, while the other remains off. These buttons also can be used to assign the key bus/DSK bus input select buttons at the crosspoint select cluster.

- *[KEY]* Press this button for keying. Buttons (2) — (5) at the key/DSK setting cluster now serve as keying setting buttons. At the same time, the key bus input select button is turned on at the cross point select cluster. The control display shows the key settig menu for the input currently selected for the key bus.

- *[DSK]* Press this button for DSK. Buttons (2) — (5) at the key/DSK setting cluster now serve as DSK setting buttons. At the same time, the DSK bus input select button is turned on at the cross point select cluster. The control display shows the key settig menu for the input currently selected for the DSK bus.

(2) Source select buttons *[EXT KEY] [LUM KEY] [CHROMA KEY] [PRESET PTN]*
For selection of key sources or DSK sources. The buttons pressed light and the others go off.

- *[EXT KEY]*   One of the external key inputs (EXT inputs) serves as a key source. The type of key effect is luminance key. The control display shows the setting menu (#01-1). Noise appears on the screen if the EXT KEY is keyed when no video signal is applied to the EXT input.

- *[LUM KEY]*   The luminance component of a video signal input selected for the key bus or DSK bus serves as a key source. The type of key effect is luminance key. The control display shows the setting menu (#01-2).

- *[CHROMA KEY]*   With a specific color excluded from the video input selected for the key bus, the rest of the video signal serves as a key source. The type of key effect is chroma key. The control display shows the setting menu (#01-3).

- *[PRESET PTN]*   A wipe signal generated at a wipe pattern generator serves as a key source. The type of key effect is pattern key. The control display shows the pattern setting menu (#30-1).

(3) Fill video select buttons *[KEY/DSK BUS] [MATTE]*

- *[KEY/DSK BUS]*   The video input selected for the key bus or DSK bus serves as a fill video signal. The control display shows the menu (#01-1/2/3) for setting.

- *[MATTE]*   Key matte color or DSK matte color serves as a fill video signal. The control display shows the key matte color setting menu (#10-1) or the DSK matte color setting menu (#10-1). At the same time, the KEY MATTE or DSK MATTE button at the color select cluster (see 5.3.7) lights. The MATTE COPY button is forced to turn off.

(4) Effect select buttons *[B/W] [SPOT]*
Used to select key effects. *[B/W]* and *[SPOT]* can be pressed independently.

- *[B/W]*   Turns a fill video black & white. This button is invalid when the *[MATTE]* button is illuminated. If the *[MATTE]* button is pressed, the B/W button goes off.

- *[SPOT]*   Reduces the signal level of the fill video to half. This produces a spot light effect when used together with pattern key. Like the *[B/W]* button, this is invalid when the *[MATTE]* button is illuminated.

An example of effective use of the SPOT effect is shown below together with a screen image obtained using this effect.

- Cross point   : Select the same input for the key bus and the program bus.
- Key setting   : Select *[PRESET PTN]*, *[KEY/DSK BUS]* and *[SPOT]*
- Wipe setting   : Select the wipe number 109 (round wipe, REV ON).

Fig. 5-12   Example of spot effect

(5) Border select buttons *[NORMAL] [BORDER] [SHADOW] [OUTLINE]*

Used to select border effects. Unlike the border effect for wipe pattern or preset pattern key, the border effect here is applied directly to the key hole created from the key source signal. A choice of three effects is available, *[NORMAL]*, *[BORDER]* and *[SHADOW]*. The button pressed lights, the others go off. The *[OUTLINE]* button can be turned on and off independently.

• *[NORMAL]*	No border effect. The *[OUTLINE]* button automatically goes off. The control display shows the menu (#01-1/2/3) for key setting.
• *[BORDER]*	Applies a border effect to key or DSK. The control display shows the menu (#03) for border setting.
• *[SHADOW]*	Applies a shadow effect to key or DSK. The control display shows the menu (#03) for border setting.
• *[OUTLINE]*	Adds an outline effect to border effect or shadow effect. When this button is pressed with *[NORMAL]* illuminated, *[BORDER]* or *[SHADOW]* is also illuminated.

(6) Key/DSK exchange button *[EXCHG]*

Pressing this button exchanges the set data between key bus and DSK. As a result, the priority of keying and DSK appears reversed. This exchange cannot be executed if the fader lever is part way through a stroke or during automatic operation at M/E and DSK.
Exchange takes place for the following items.

• Keying setting for a video input

• Input selected

• Keying ON or OFF

In keying setting, if the inputs selected for key bus and DSK bus are different, then

• the keying setting for the selected input on the key bus is exchanged with that for the same input on the DSK bus;

• the DSK setting for the selected input on the DSK bus is exchanged with that for the same input on the key bus.

■ This function can also be controlled via GPI (see 5.4.9).
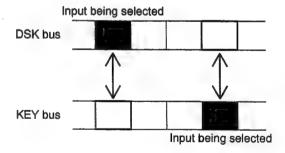
Fig. 5-13 Example of exchange operation

| 5.3.9 | **Multi-Purpose Key Cluster** |

Used for multiple purposes such as calling up a setting menu on the control display, entry of numerical values, and turning various functions on and off.

These buttons usually serve as menu callup buttons and function on/off buttons, but not as a ten-key pad. The ten-key mode is only available when the multi-purpose keys are used to activate a setting mode.

The ENT button lights when the ten-key mode is entered, but the other buttons do not light regardless of the operation mode.
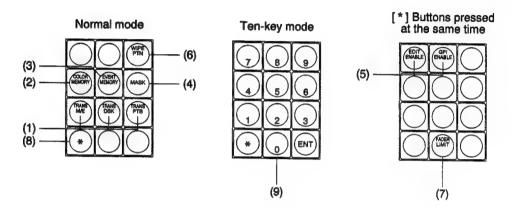
Fig. 5-14 Multi-purpose key cluster

(1) Transition time setting & display buttons *[TRANS M/E] [TRANS DSK] [TRANS FTB]*
Press these buttons when setting transition time. Pressing one of these buttons calls up the transition time setting menu (#40) on the control display. The multi-purpose key cluster will enter the ten-key mode.

- *[TRANS M/E]*   To set the transition time for auto operation by the auto button at the M/E sender cluster.

- *[TRANS DSK]*   To set the transition time for auto operation by the auto button at the DSK sender cluster.

- *[TRANS FTB]*   To set the transition time for auto operation by the fade out/in button at the fade-out section.

On each setting menu, all three transition times are simultaneously indicated. These can be adjusted with the knobs or through ten-key entry using the multi-purpose key cluster. Ten-key entry is valid for the data associated with the button pressed first. For instance, when the [TRANS M/E] button is pressed, the duration for M/E transition can be entered through via the "ten key pad", while DSK and FTB transition times can be entered only by turning the knob.

To cancel the currently set multi-purpose key mode, call up another setting menu. If the ten key entry mode is cancelled before the ENT button is pressed, any values already entered become invalid.

(2) Color memory setting & display button *[COLOR MEMORY]*
Press this button to use the color memory. Pressing this button activates the setting mode and calls up the color memory setting menu (#50) on the control display, where read and write of color memory are executed. Color memory setting is applied to the color being selected at the color select cluster (see 5.3.7).

In the setting mode, color memory numbers can be numerically entered using the multi-purpose keys.

Be sure to press the ENT button after entering a numerical value, otherwise the entered values will not be valid. To cancel the setting mode, call up another setting menu.

The color memory offers 32 colors in total including 9 preset colors and 23 user colors. Desired colors can be stored as user colors, including gradations for back color.

(3) Event memory setting & display button *[EVENT MEMORY]*
Press this button to use the event memory. Pressing this button activates the setting mode and calls up the event memory setting menu (#51) on the control display, where read and write of event memory are executed. Event memory setting is applied to the current settings on the control panel.

In the setting mode, event memory numbers can be entered with the multi-purpose keys.

Be sure to press ENT after making an entry, otherwise the entered values will not be valid. To cancel the setting mode, call up another setting menu.

The event memory can hold 16 events each containing the data listed below.

• ON/OFF status of buttons and lamps (except for the bus assign buttons shown in Fig. 5-5(2) and Fig. 5-11(1).)

• All control values

• All color settings

Note: The status of the EDITOR lamp cannot be stored in the event memory.

(4) Masking setting & display button *[MASK]*
Press this button to set masking for key or DSK. Pressing this button calls up the masking setting menu (#02) on the control display. Setting is executed by the knobs and buttons below the control display. The same menu is also called up when masking is selected from the key or DSK setting menu (#01-1/2/3).

Masking is box-shaped. Box size can be set as desired. Masking may be inside or outside the box.

(5) External control acceptance buttons *[EDIT ENABLE] [GPI ENABLE]*
To enable or disable control via external equipment. To avoid operational errors, these buttons are only valid when pressed together with the *[*]* button. Each time a button is pressed, it alternates between enable and disable.

• *[EDIT ENABLE]*   Enables or disables control via external units connected to the main unit EDI-TOR connector, EXTERNAL INTERFACE connector, and AUDIO INTERFACE connector. If enabled, the EDITOR lamp lights (see 5.3.10).

• *[GPI ENABLE]*   Enables or disables control via units connected to the main unit GPI terminals. If enabled, the GPI lamp lights (see 5.3.10).

(6) Wipe pattern number setting button *[WIPE PTN]*
Press this button to use wipe patterns not indicated on the wide pattern indicators in the wipe pattern select cluster (see 5.3.6) or when setting wipe pattern characteristics. Pressing this button activates the setting mode and calls up the wipe setting menu (#30-1) on the control display. In the setting mode, desired wipe pattern numbers can be entered with the multi-purpose keys.

The existing wipe pattern will change when new value is entered and the ENT button is pressed.

■ The numbers entered are indicated digit by digit on the number indicator of the wipe pattern select cluster.

■ Be sure to press the ENT button after making an entry, otherwise the entered value will not be valid.

■ To cancel the setting mode, press the pattern select button on the wipe pattern select cluster or call up another setting menu. If setting is cancelled before pressing the ENT button, entered wipe numbers will not be valid.

■ Although pressing the ENT button cancels the ten key mode, the wipe setting menu remains available.

(7) Fader limit memory button *[FADER LIMIT]*
Used to set the fader limit function. This function stops the transition at a desired position partway through the stroke during transitions at the M/E sender cluster.

Follow the steps below to set the fader limit.

1) While monitoring the program monitor, move the fader lever to the position where transition is to stop.

2) Press the *[FADER LIMIT]* button while pressing the *[*]* button.

The current fader position is stored in memory as a fader limit, and the fader limit mode is entered. This operation is invalid if the fader lever is at the start positon.

The fader mode is different from normal modes in the following respects.

■ Fader lever movement has no affect when it goes beyond the fader limit.

■ "Auto" transition takes place between the fader limit and the start position over a specified duration.

■ "Cut" operation is executed somewhere between the fader limit and the start positon.

■ NO flip flop operation takes place between buses (see 1.4.1).

■ The LEDs to the left side of the fader lever blink instead of lighting.

To cancel the fader limit mode, return the fader lever to the start positon and press the *[FADER LIMIT]* button while pressing the *[*]* button.

(8) Utility button *[*]*
Buttons (5) and (7) will only function whe n pressed together with the utility button..

(9) Ten key pad *[0-9] [ENT]*
The multi-purpose key cluster can be used as a ten key pad, but only in setting modes entered using this key cluster.

- *[0-9]*   Used for numerical entry

- *[ENT]*   Fixes the numerical values enterd and cancels the setting mode. The values entered are valid only when followed by pressing this key.

5.3.10 External control acceptance indicators *[EDITOR] [GPI]*

Lamps indicating enable or disable of control via external units. When a lamp is illuminated, external control is enabled. Switching between enable and disable is performed by the multi-purpose key cluster.

- *[EDITOR]*   Indicates that control via external units (such as a video editor) connected to the main unit EDITOR, EXTERNAL, INTERFACE and AUDIO INTERFACE connectors is enabled.

- *[GPI]*   Indicates that control via units connected to the main unit GPI terminal is enabled.

5.4 Menu Items and Usage of the Control Display

5.4.1 List of menu items

The list of items available on the control display is given below. The diagram on next page shows how the control panel buttons are linked with the menu items.

- The values referred to as default are those set at factory. Since the KM-5000 retains settings in memory even with the power turned off, default does not mean the initial values entered when the power is turned on again.

- The set data is renewed in real time when the knob is turned or the button is pressed.

Table 5-1 List of menu items

ID (Menu No.)	Uses	Section
#01-1	Setting EXT (external) key	
#01-2	Setting LUM key	5.4.3
#01-3	Setting chroma key	
#02	masking	5.4.4
#03	Setting key/DSK border	5.4.5
#10-1	Setting color other than back color	
#10-2	Setting back color	5.4.6
#20	Setting test signal	5.4.7
#30-1	Basic setting of wipe pattern	
#30-2	Expanded setting of wipe pattern	5.4.8
#40	Setting transition time and GPI setting	5.4.9
#50	Setting color memory	5.4.10
#51	Setting event memory	5.4.11
#60	Display of software versions	
None	Opening message	5.4.12
None	Error message	

5.4.2 Detailed descriptions are provided for each menu.

Items included in each menu description are indicated below.

<ID No.>	ID number and sub-number of the setting menu
<Use>	Describes when or how the menu is used
<Callup method>	Describes how to call up the menu
<Functions of knobs and buttons>	Describes what and how changes are made by operating the knobs and buttons

Other explanations are given as required.

EXT key setting menu

CLIP	GAIN	UNI	EXT	INV	MASK	01
xxx	xxx	Off	x	Off	Off	-1

#01-1

○ ○ ○ ○ ▢ ⊂ — #02 (OFF → ON)

LUM key setting menu

CLIP	GAIN	UNI		INV	MASK	01
xxx	xxx	xxx		Off	Off	-2

#01-2

○ ○ ○ ○ ▢ ⊂ — #02 (OFF → ON)

CHROMA key setting menu

CLIP	GAIN	HUE		INV	MASK	01
xxx	xxx	xxx		Off	Off	-3

#01-3

○ ○ ○ ○ ▢ ⊂ — #02 (OFF → ON)

Masking setting menu

←	→	↑	↓	AREA	MASK	02
xxx	xxx	xxx	xxx	Out	On	

#02

○ ○ ○ ○ ▢ ⊂ — #01-1/2/3 (OFF → ON)

Border setting menu

HUE	SAT	LUM	POSI	STEP	INTEN	03
xxx	xxx	xxx	Center	2	Full	

#03

○ ○ ○ ○ ▢ ▢

Color setting munu

HUE	SAT	LUM				10
xxx	xxx	xxx				-1

#10-1

○ ○ ○ ○ ▢ ▢

Back color setting menu

HUE	SAT	LUM	◢LUM	MODE		10
xxx	xxx	xxx	xxx	Off		-2

#10-2

○ ○ ○ ○ ▢ ▢

Built-in test signal setting menu

SIGNAL						20
x						

#20

○ ○ ○ ○ ▢ ▢

Wipe pattern setting menu-1

PSTSZ	SOFT	BDR	ASPECT	REV	MENU	30
xxx	xx	xx	xxx	On	More	-1

#30-1

○ ○ ○ ○ ▢ ⊕ #30-2

Wipe pattern setting menu-2

PITCH					MENU	30
x					Home	-2

#30-2

○ ○ ○ ○ ▢ ⊕ #30-1

Transition time and GPI setting menu

M/E	DSK	FTB		GPISEL		40
xxx	xxx	xxx		M/E		

#40

○ ○ ○ ○ ▢ ▢

Color memory setting menu

COLOR						50
xx				Read	Store	

#50

○ ○ ○ ○ ▢ ▢

Event memory setting menu

EVENT	AREA					51
xx	All			Read	Store	

#51

○ ○ ○ ○ ▢ ▢

#01-1/2/3   #10-1   #03   #50   #51   #30-1

#10-2
#10-1
#20 (OFF → ON)

#02
#40
#01-1/2/3, #30-1
#01-1/2/3 (OFF → ON)

#01-1   #01-2   #01-3   #30-1   #10-2   #30-1

Fig. 5-15 How the buttons are linked with display items

5.4.3 Key/DSK setting menu

#01-1	CLIP	GAIN	UNI	EXT	INV	MASK	01
	xxx	xxx	Off	x	Off	Off	-1

#01-2	CLIP	GAIN	UNI		INV	MASK	01
	xxx	xxx	xxx		Off	Off	-2

#01-3	CLIP	GAIN	HUE		INV	MASK	01
	xxx	xxx	xxx		Off	Off	-3

○   ○   ○   ○   ▢   ▢
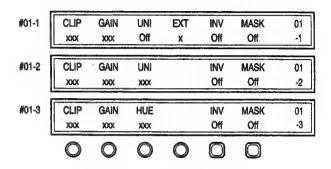
Fig. 5-16 Key/DSK setting menu

<ID No.>
#01-1 : EXT (external) key setting menu
#01-2 : LUM key setting menu
#01-3 : CHROMA key setting menu

<Use>
To set key or DSK.

<Callup method>
Press one of the following buttons.
• M/E sender cluster   [KEY]
• DSK sender cluster   [DSK PVW Off → On] [CUT Off → On]
• Key/DSK setting cluster   [KEY] [DSK] [EXT KEY] [LUM KEY] [CHROMA KEY] [NORMAL] [KEY/DSK BUS]
• Masking setting menu (#02)   [MASK On → Off]
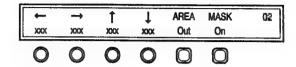
When the input video is selected on key bus and DSK bus at the cross point select cluster with this menu displayed, the data displayed on this menu are automatically exchanged to those of the key or DSK for the selected input.

<Functions of knobs and buttons>

Table 5-2 Key/DSK setting details

symbol	Functions	Range Set at ( ) at factory
CLIP	Setting clip level of key/DSK source signal.	0 – 100 (50)
GAIN	Setting gain of key/DSK source signal.	1 – 100 (50)
HUE	Setting hue of chroma key. Unit in degree. Chroma key (#01-3) only displayed. Returns to 0 when exceeding 359.	0 – 359 (0)
UNI	Turns unity-gain on and off. When turned on, CLIP and GAIN reach certain values and are no longer variable. No display for chroma key (#01-3), with CLIP and GAIN changeable.	On/(Off)
EXT	Selects input for EXT key. EXT key (#01-1) only to be displayed.	1 – 6 (1)
INV	Sets polarity of key/DSK source. Turns on and off every time the button is pressed.	On: reverse Off: not reverse
MASK	Turns key/DSK SIGNAL masking on and off. Goes on and off every time the button is pressed. When turned on, the masking setting menu (#02) is called up.	On/(Off)

5.4.4 | **Masking setting menu**

←	→	↑	↓	AREA	MASK	02
xxx	xxx	xxx	xxx	Out	On	

○ ○ ○ ○ ☐ ☐

Fig. 5-17 Masking setting menu

<ID No.>	#02
<Use>	To set masking for key or DSK
<Callup method>	Press one of the following buttons.

• Multi-purpose key cluster   : [MASK]

• Key/DSK setting menu (#01-1, 2, 3)   : [MASK Off → On]

<Functions of knobs and buttons>

Table 5-3 Masking setting details

Symbol	Functions	Range Set at ( ) at factory
←	Sets the left end of masking menu. Data: percentage (%) of the horizontal width of screen using the left end of screen as a reference.	0 – 100 (25)
→	Sets the right end of masking menu. Data: percentage (%) of the horizontal width of screen using the left end of screen as a reference.	0 – 100 (75)
↑	Sets the top end of masking menu. Data: percentage (%) of the vertical height of screen using the top of screen as a reference.	0 – 100 (25)
↓	Sets the lower end of masking menu. Data: percentage (%) of the vertical height of screen using the top of screen as a reference.	0 – 100 (75)
AREA	Sets the area to be masked. In/Out alternate each time the button is pressed.	In: Inside (Out): Outside
MASK	Turns masking on and off. On/Off alternate every time the button is pressed. When turned off, key/DSK setting menu (#01-1,2,3) is called up.	On/Off

| 5.4.5 | Border setting menu |

HUE	SAT	LUM	POSI	STEP	INTEN	03
xxx	xxx	xxx	Center	2	Full	

○ ○ ○ ○ ⬜ ⬜
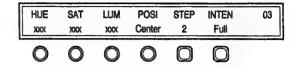
Fig. 5-18 Border setting menu

<ID No.>   #03

<Use>   To set border for key or DSK

<Callup method> Press one of the following buttons.

       • Key/DSK setting cluster : [BORDER] [SHADOW] [OUT LINE]

<Functions of the knobs and buttons>

Table 5-4 Border setting details

Symbol	Functions	Range Set at ( ) at factory
HUE	Sets hue. Unit: degree.	0 – 359
SAT	Sets saturaton.	0 – 100
LUM	Sets luminance. Percentage of the 100 % color bars.	0 – 100
POSI	Sets the border position relative to the key/DSK source. When [SHADOW] is selected, Center cannot be selected. If Center is selected at BORDER then switched to SHADOW, the range is set at right bottom. When STEP is set at 2 (thick) for [BORDER], POSI cannot be turned. In this case, border positon always remains at center.	← ↓ left bottom ← left ← ↑ left top ↑ top ↑ → right top → right ↓ → right bottom ↓ bottom CENTER center
STEP	Set the border width. Stepwise values.	(1) : thin 2 : thick
INTEN	Sets the extent of mixture of border with background	Half/(Full)

5-21

5.4.6 Color setting menu

HUE	SAT	LUM	◢ LUM	MODE	10
xxx	xxx	xxx	xxx	Off	xx

○   ○   ○   ○   ◻   ◻
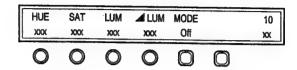
Fig. 5-19 Color setting menu

\<ID No.\>	#10-1 : Setting color other than back color #10-2 : Setting back color
\<Use\>	To set color signals
\<Callup method\>	Press one of the following buttons.

- Crosspoint select cluster: [BACK COLOR] (#10-2)
- Key/DSK setting cluster: [MATTE] (#10-1)
- Color select cluster: [BACK COLOR] [KEY MATTE] [DSK MATTE] [WIPE BORDER] [KEY BORDER] [DSK BORDER]

\<Functions of the knobs and buttons\>

Table 5-5 Color setting details

Symbol	Functions	Range Set at ( ) at factory
HUE	Sets hue. Unit: degree.	0 – 359
SAT	Sets saturaton.	0 – 100
LUM	Sets luminance. Percentage of the 100 % color bars.	0 – 100
Data below is displayed only on #10-2.		
◢ LUM	Sets the luminance at the end point of gradation. Percentage to the 100 % color bars.	–50 – 50(0)
MODE	Sets direction and on/off of gradation.	(Off):gradation turned off H: horizontal V: vertical

When the color being created exceeds a specified signal level, the SAT value is forcibly suppressed below the specified level. The suppressed SAT value is not automatically restored to its initial value. For example, although raising the LUM value too high results in a reduced SAT value, reducing the LUM value will not increase the SAT value. Reset the SAT value manually as required.

\<Colors set at factory\>

[BACK COLOR]	: Preset color 1 (blue)
[KEY MATTE]	: Preset color 2 (red)
[DSK MATT]	: Preset color 3 (magenta)
[WIPE BORDER]	: Preset color 4 (green)
[KEY BORDER]	: Preset color 5 (cyan)
[DSK BORDER]	: Preset color 6 (yellow)

5.4.7	**Built-in test signal setting menu**
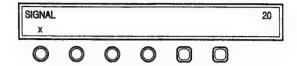
Fig. 5-20 Built-in test signal setting menu

<ID No.>	#20
<Use>	To select a signal generated by the built-in signal generator. The signal selected can be used as an input video to each bus.
<Callup method>	Press the following button.

• Crosspoint select cluster: [TEST GEN off → on]

Pressing the TEST GEN button when illuminated switches the current menu #20 to the preceding menu.

<Functions of the knobs and buttons>

Table 5-6 Built-in test signal setting details

Symbol	Functions	Renge Set at ( ) at factory
SIGNAL	Selects types of test signals.	(1): Color bars 2: Valid ramp 3: Multi-burst

5.4.8	Wipe pattern setting menu

#30-1

PSTSZ	SOFT	BDR	ASPECT	REV	MENU	30
xxx	xx	xx	xxx	On	More	-1

#30-2

PITCH					MENU	30
x					Home	-2

○   ○   ○   ○   ◻   ◻
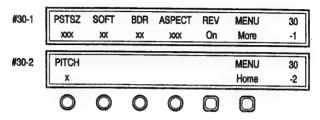
Fig. 5-21 Wipe pattern setting menu

<ID No.>	#30-1 : Basic setting #30-2 : Expanded setting
<Use>	To set wipe patterns. The wipe patterns set here are also used as source signals for transition effects and pattern keys.
<Callup method>	Press one of the following buttons to call up #30-1. #30-2 is the sub-menu of #30-1 and can be called up on the main menu #30-1.

- M/E sender cluster   : [WIPE]
- Multi-purpose key cluster   : [WIPE PTN]
- Key/DSK setting cluster   : [PST PTN]

<Functions of the knobs and buttons>

Table 5-7 Wipe pattern setting details

Symbol	Functions	Range Set at ( ) at factory
PTSZ	Sets size of preset pattern key's source pattern. Data: Percentage (%) of the maximum.	0 – 100 (50)
SOFT	Sets the degree of softening of the pattern border. No softening at 0. The greater the value, the more softening.	0 – 100 (0)
BDR	Sets pattern border width in 256 steps. Value as a reference.	0 – 100 (0)
ASPECT	Sets pattern's aspect ratio. Values greater than 0 horizontally compress the pattern, values smaller than 0 vertically compress the pattern.	–50 – (0) – 50
REV	Sets direction in which pattern changes. With OFF (normal), the pattern changes in the direction in which the white area in the wipe pattern indicator symbol expands. With ON (reverse), it changes in the direction in which the black area expands.	Off/On (Off)
MENU	Calls up the expanded setting menu (#30-2)	None

Table 5-8 Wipe pattern setting details (#30-2)

PITCH	Sets the degree to which the pattern grid-like. Not applicable to some patterns. The greater the value, the rougher the grid.	1 – 4 (1)
MENU	Calls up the basic menu.	None

5.4.9 | **Transition time and GPI setting menu**
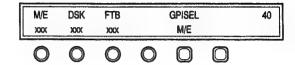
Fig. 5-22 Transition time and GPI setting menu

<ID No.> #40

<Use> To set the auto transition time and GPI function.

<Callup method> Press one of the following buttons.
  • Multi-purpose key cluster: [TRANS M/E] [TRANS DSK] [TRANSK FTB]

<Functions of the knobs and buttons>

When this menu is displayed, the multi-purpose key cluster can be used as a ten key pad for numerical entry. Plese note that entry through the ten-key pad facility is valid only for the data specified by the multi-purpose key when calling up this menu. Numerical entry via the ten-key pad must be validated by pressing the ENT button.

Table 5-9 Transition time setting details

Symbol	Functions	Renge Set at ( ) at factory
M/E	Sets transition time in frames specified by auto button at M/E sender. Cut-start at 0.	0 – 999 (100)
DSK	Sets transition time in frames specified by auto button at DSK sender. Cut-start at 0.	0 – 999 (100)
FTB	Sets fade-out/in time in frames specified by Fade-out section. Cut-start at 0.	0 – 999 (100)
GPISEL	Sets auto operation started when a trigger is applied to the main unit GPI terminal's "SEL". KEY EXCHG to start when set to Exchg is not auto operation but can be trigger-operated.	M/E : M/E AUTO Dsk : DSK AUTO Ftb : FTB Exchg : KEY EXCHG

5.4.10	**Color memory setting menu**
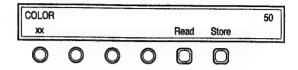
Fig. 5-23 Color memory setting menu

<ID No.>	#50
<Use>	To read from or write to color memory
<Callup method>	Press the following button.

• Multi-purpose key cluster   : [COLOR MEMORY]

<Functions of the knobs and buttons>

When this menu is displayed, the multi-purpose key cluster can be used as a ten key pad for numerical entry.

Numerical entry via the ten-key pad must be validated by pressing the ENT button.

Table 5-10 Color memory setting details

Symbol	Functions	Renge Set at ( ) at factory
COLOR	Sets memory No. Read or write does not take place when turning this knob until the Read or Store button is pressed.	(1)-9: preset color 10-32: user color
Read	Changes the color selected by the color select cluster to the color in the memory selected by the COLOR knob.	None
←Read (Direct read)	Once this button is pressed, the COLOR knob enters the direct read mode, where memory color is read out just by turning the knob. Pressing the button again restores the normal mode.	
Store	Color selected at color select cluster is stored in memory selected by COLOR knob.	None

<Preset color>

1 : Blue
2 : Red
3 : Magenta
4 : Green
5 : Cyan
6 : Yellow
7 : White (100 %)
8 : White (75 %)
9 : White (50 %)

| 5.4.11 | **Event memory setting menu** |

```
┌──────────────────────────────────────────────┐
│ EVENT   AREA                             51    │
│   xx      All              Read    Store       │
└──────────────────────────────────────────────┘
     O      O      O      O      ▢      ▢
```
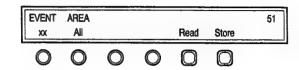
Fig. 5-24 Event memory setting menu

<ID No.>	#51
<Use>	To read or write event memory
<Callup method>	Press the following button. • Multi-purpose key cluster: [EVENT MEMORY]

<Functions of the knobs and buttons>

When this menu is displayed, the multi-purpose key cluster can be used as a ten key pad for numerical entry. Numerical entry via the ten-key pad must be validated by pressing the ENT button.

Table 5-11 Event memory setting details

Symbol	Functions	Range Set at ( ) at factory
EVENT	Sets memory No. Read or write does not take place when turning this knob until Read or Store button is pressed.	1 – 16 (1)
AREA	Specifies an area for the event read-out data. Effective only for the READ button.	(All), Buses, Eff, Key, Dsk, Color, Wipe
Read ←Read (Direct read)	Changes the current status of the control panel to the memory selected by EVENT knob. Once this button is pressed, the EVENT knob enters the direct read mode, where an event is read out on the control panel just by turning the knob. Pressing the button again restores the normal mode. In cases where the display changes in link with the event, direct read does not take place.	None
Store	Current status of control panel is stored in the memory selected by the EVENT knob.	None

When reading out event memory, the control display may switch from the event memory setting menu to a display responsive to the read-out data, as soon as readout is finished.

| 5.4.12 | **Other Menus** |

(1) Opening message

```
┌──────────────────────────────────────────┐
│ JVC Digital component vision mixer         │
│             KM-5000                        │
└──────────────────────────────────────────┘
```

    O   O   O   O   ▢   ▢
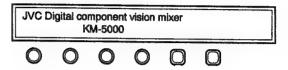
Fig. 5-25 Opening message

Displayed for about a second when turning the power on or resetting hardware.

(2) Software version display

```
┌──────────────────────────────────────────┐
│ Control unit  >  C1091  V1.0          60   │
│   Main unit   >  C1090  V1.0      Ok       │
└──────────────────────────────────────────┘
```

    O   O   O   O   ▢   ▢
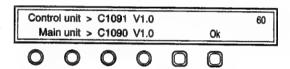
Fig. 5-26 Software version display

This display comes up when the control unit receives the version information from the main unit to indicate software versions for both the control unit and main unit. It usually stays on during the initial communications period of about 3 to 4 seconds following the opening message, and then switches automatically to the key/DSK setting menu.

- When the version information is received on any menu display other than opening message, press the OK button to recover the menu.
- The software version display may stay for a prolonged time if line trouble occurs during initial communications, but will usually go off after 20 to 30 seconds.
- When the power of the control unit is turned off and on again during operation, the initial communications may be entered without showing the version display.
- The software versions indicated in Fig. 5-26 are only examples and may be different from those of the actual units.

(3) Error messages

```
┌──────────────────────────────────────────┐
│ Main unit is not connected.                │
│                                            │
└──────────────────────────────────────────┘
```

    O   O   O   O   ▢   ▢
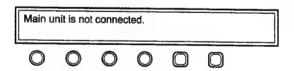
Fig. 5-27 Error messages

Displayed when problems occur such as a disconnected communications cable or the main unit power is turned off. No operations are accepted as long as this display is shown.
Once the problem has been remedied, the previous menu does not resume because initial communications must be executed again.

6. LIST OF WIPE PATTERNS

6.1 Types of wipe pattern

The following wipe patterns are available with the KM-5000. Wipe goes forward in the directon in which the white area within the pattern symbol is expanded. When REVERSE is turned on the wipe setting menu (#30-1), the direction is reversed so that wipe proceeds with the black area being expanded.

While patterns 1 through 15 can be selected directly by the wipe select buttons, those after No. 16 must be entered through the ten key pad (see 5.3.9).
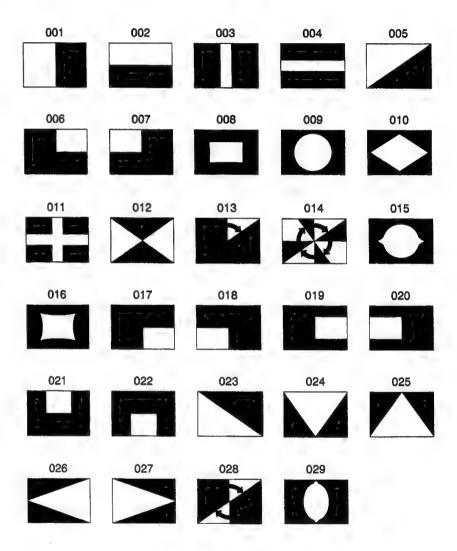
Fig. 6-1 List of wipe patterns

6.2 Range of Wipe Pattern Numbers.

The table below shows the range of wipe pattern numbers. Adding 100 by 100 to the normal pattern numbers gives the numbers of the patterns with reverse and PITCH effects.

Table 6-1 Range of pattern numbers

Range of Nos.	Pattern status
0 – 98	Normal pattern
99	Fixed pattern for video editors
100 – 199	Reverse pattern
200 – 299	Normal pattern with PITCH effect level 1 added
300 – 399	Normal pattern with PITCH effect level 2 added
400 – 499	Normal pattern with PITCH effect level 3 added
500 – 599	Normal pattern with PITCH effect level 4 added

■ Pattern No. 001 in Fig. 6-1 is selected when any number outside the range is specified.

■ When the KM-5000 is controlled from a video editor, there may be only 256 pattern numbers (0-255 or 1-256) selectable depending on the editor. In this case, select a deisred wipe pattern No. in advance on the control panel, then select pattern No. 99 on the editor. Upon receiving the pattern No. 99, the KM-5000 gives priority to the wipe pattern No. selected on the control panel.

6.3 Pattern Code Scheme
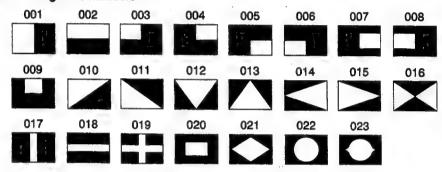
Wipe pattern numbers can be made exchangeable with those in the JVC KM-3000 or GVC Model 100 by setting the dip switches inside the main unit. While it is possible to set the control unit and external units 1 (EDITOR) and 2 (EXTERNAL INTERFACE) differently, it is recommended that settings be the same for all units to avoid confusion.
See chapter 7 to set the dip switches.

6.3.1 KM-3000 exchangeable code

The diagram below shows the KM-5000 wipe pattern numbers exchangeable with those of the KM-3000. The patterns not available on the KM-3000 are also usable with the numbers below.

KM-3000 exchangeable numbers

Patterns not available in KM-3000
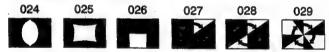
Fig. 6-2 KM-3000 exchangeable code

6.3.2 Model 100 exchangeable code

The diagram below shows the KM-5000 wipe pattern numbers exchangeable with those of the GVG Model 100.

The numbers in [ ] are also exchangeable with those of the Model 300 (the parent model of the Model 100). The numbers in ( ) are specific to the KM-5000.
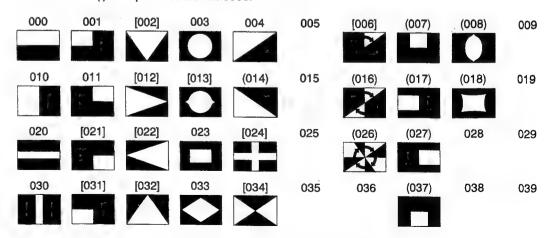
Fig. 6-3 Model 100 exchangeable code

6.4 Operational Restrictions for Wipe Patterns

There are several restrictions in operating wipe patterns

6.4.1 Positioner restrictions

- Round pattern or box pattern cannot be moved completely out of the screen.
- Positioner cannot be used together with PITCH effect.
- Positioner cannot be used for the following patterns. If any of these patterns are selected, positioner's ON button is locked, disabling on-off operation.

Fig. 6-4

6.4.2 PITCH restrictions

- Cannot be used together with positioner. The latter is forcibly turned off. With PITCH kept ON, positioner cannot be turned on.
- PITCH cannot be used for the following patterns. If the wipe numbers including PITCH parameters are specified for these patterns, the wipe patterns take the numbers of normal pattern or reverse pattern. However, the PITCH parameters already specified do not change.

Fig. 6-5

6.4.3 ASPECT restrictions

- ASPECT cannot be used for the following patterns. If those patterns are selected with ASPECT on, ASPECT appears to be off on the display, but the ASPECT parameters themselves do not change.

Fig. 6-6

6.5 List of Wipe Numbers
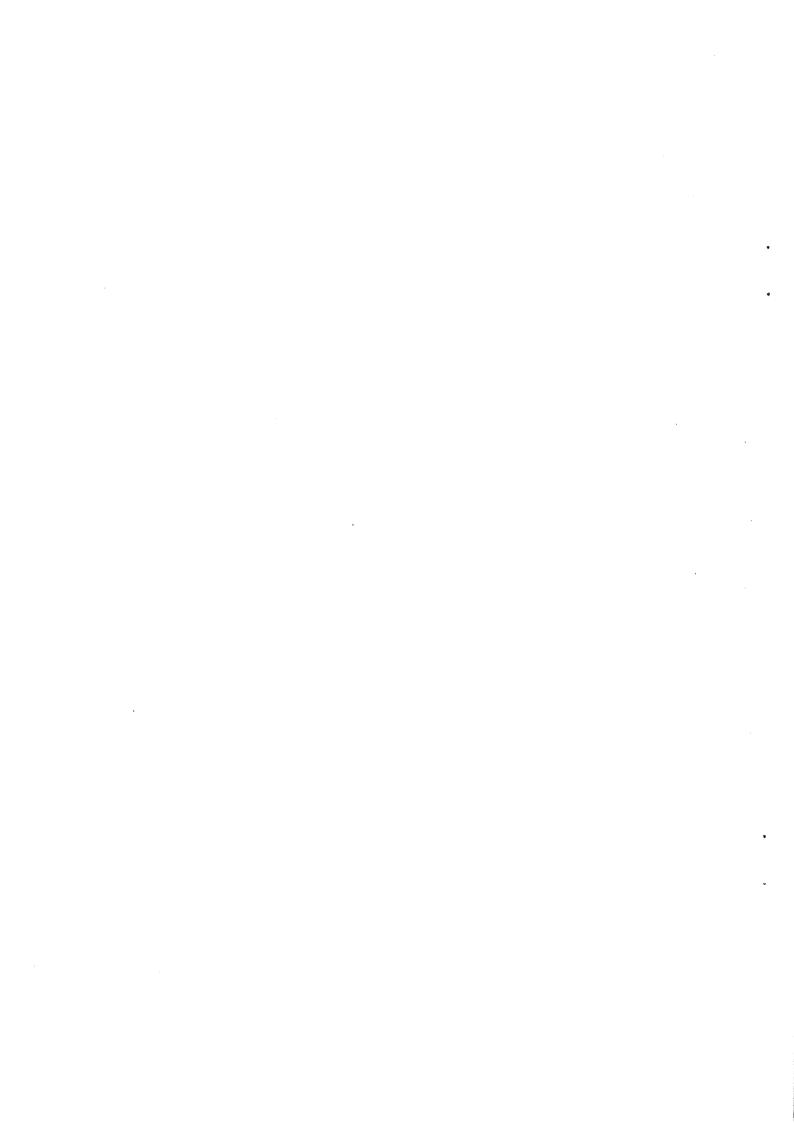
Numbers list in each wipe code scheme is given below. When selecting wipe numbers on video editors, some numbers are not available as described in the "Range of Wipe Numbers".

Table 6-2

Pattern Symbol	Wipe No. : N (Rev. OFF), R (Rev. ON), P (Pitch ON)					
		Standard code		KM-3000 exchangecable		Model 100 exchangecable
	N	001	N	001	N	010
	R	101	R	101	R	110
	P	201, 301, 401, 501	P	201, 301, 401, 501	P	210, 310, 410, 510
	N	002	N	002	N	000
	R	102	R	102	R	100
	P	202, 302, 402, 502	P	202, 302, 402, 502	P	200, 300, 400, 500
	N	003	N	017	N	030
	R	103	R	117	R	130
	P	203, 303, 403, 503	P	217, 317, 417, 517	P	230, 330, 430, 530
	N	004	N	018	N	020
	R	104	R	118	R	120
	P	204, 304, 404, 504	P	218, 318, 418, 518	P	220, 320, 420, 520
	N	005	N	010	N	004
	R	105	R	110	R	104
	P	205, 305, 405, 505	P	210, 310, 410, 510	P	204, 304, 404, 504
	N	006	N	004	N	011
	R	106	R	104	R	111
	P	206, 306, 406, 506	P	204, 304, 404, 504	P	211, 311, 411, 511
	N	007	N	003	N	001
	R	107	R	103	R	101
	P	207, 307, 407, 507	P	203, 303, 403, 503	P	201, 301, 401, 501
	N	008	N	020	N	023
	R	108	R	120	R	123
	P	208, 308, 408, 508	P	220, 320, 420, 520	P	223, 323, 423, 523
	N	009	N	022	N	003
	R	109	R	122	R	103
	P	209, 309, 409, 509	P	222, 322, 422, 522	P	203, 303, 403, 503
	N	010	N	021	N	033
	R	110	R	121	R	133
	P	210, 310, 410, 510	P	221, 321, 421, 521	P	233, 333, 433, 533

LIST OF WIPE PATTERNS

Pattern Symbol		Wipe No. : N (Rev. OFF), R (Rev. ON), P (Pitch ON)				
		Standard code		KM-3000 exchangecable		Model 100 exchangecable
	N	011	N	019	N	024
	R	111	R	119	R	124
	P	211, 311, 411, 511	P	219, 319, 419, 519	P	224, 324, 424, 524
	N	012	N	016	N	034
	R	112	R	116	R	134
	P	212, 312, 412, 512	P	216, 316, 416, 516	P	234, 334, 434, 534
	N	013	N	027	N	006
	R	113	R	127	R	106
	P	—	P	—	P	—
	N	014	N	029	N	026
	R	114	R	129	R	126
	P	—	P	—	P	—
	N	015	N	023	N	013
	R	115	R	123	R	113
	P	215, 315, 415, 515	P	223, 323, 423, 523	P	213, 313, 413, 513
	N	016	N	025	N	018
	R	116	R	125	R	118
	P	216, 316, 416, 516	P	225, 325, 425, 525	P	218, 318, 418, 518
	N	017	N	005	N	021
	R	117	R	105	R	121
	P	217, 317, 417, 517	P	205, 305, 405, 505	P	221, 321, 421, 521
	N	018	N	006	N	031
	R	118	R	106	R	131
	P	218, 318, 418, 518	P	206, 306, 406, 506	P	231, 331, 431, 531
	N	019	N	007	N	027
	R	119	R	107	R	127
	P	219, 319, 419, 519	P	207, 307, 407, 507	P	227, 327, 427, 527
	N	020	N	008	N	017
	R	120	R	108	R	117
	P	220, 320, 420, 520	P	208, 308, 408, 508	P	217, 317, 417, 517

Pattern Symbol	Wipe No. : N (Rev. OFF), R (Rev. ON), P (Pitch ON)					
		Standard code		KM-3000 exchangecable		Model 100 exchangecable
	N	021	N	009	N	007
	R	121	R	109	R	107
	P	221, 321, 421, 521	P	209, 309, 409, 509	P	207, 307, 407, 507
	N	022	N	026	N	037
	R	122	R	126	R	137
	P	222, 322, 422, 522	P	226, 326, 426, 526	P	237, 337, 437, 537
	N	023	N	011	N	014
	R	123	R	111	R	114
	P	223, 323, 423, 523	P	211, 311, 411, 511	P	214, 314, 414, 514
	N	024	N	012	N	002
	R	124	R	112	R	102
	P	224, 324, 424, 524	P	212, 312, 412, 512	P	202, 302, 402, 502
	N	025	N	013	N	032
	R	125	R	113	R	132
	P	225, 325, 425, 525	P	213, 313, 413, 513	P	232, 332, 432, 532
	N	026	N	014	N	022
	R	126	R	114	R	122
	P	226, 326, 426, 526	P	214, 314, 414, 514	P	222, 322, 422, 522
	N	027	N	015	N	012
	R	127	R	115	R	112
	P	227, 327, 427, 527	P	215, 315, 415, 515	P	212, 312, 412, 512
	N	028	N	028	N	016
	R	128	R	128	R	116
	P	—	P	—	P	—
	N	029	N	024	N	008
	R	129	R	124	R	108
	P	229, 329, 429, 529	P	224, 324, 424, 524	P	208, 308, 408, 508
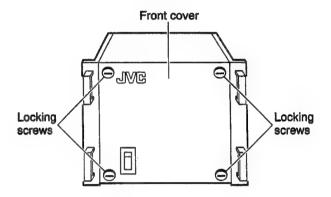
7. INTERNAL SWITCH SETTINGS FOR SOFTWARE CONTROL
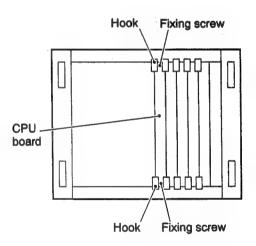
7.1 Main Unit CPU Board

7.1.1 How to take out the CPU board

1) Turn the POWER switch to off.

2) Turn four snap lock screws counterclockwise at an angle of 90° with an ordinary (−) screwdriver, and remove the front cover.

Front cover

Locking screws

Locking screws
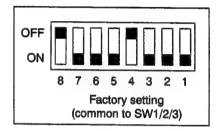
3) Remove two fixing screws on the CPU board.

4) Pull the upper and lower hooks retaining a board toward you at the same time, and then pull the board outward.

Hook   Fixing screw

CPU board

Hook   Fixing screw

These switches are used to set communication parameters for serial communications. Each switch corresponds to a communications connector as shown below:

- SW1   External control connector 1 (TO EDITOR)
- SW2   External control connector 2 (EXTERNAL INTERFACE)
- SW3   Audio interface connector (AUDIO INTERFACE)

Factory setting
(common to SW1/2/3)

Number	Setup items	Remarks (* denotes factory setting)
8	Baud rate	*OFF : 38.4K ON : 9600
7,6	Parity	7 6 7 6 7 6 ODD EVEN *NONE
5	Stop bit	OFF : 2 *ON : 1
4	Select address	*OFF : Accepts only 30 hex as select address ON : Accepts an arbitrary byte as select address
3	Effect address	OFF : Correctly accepts effect address *ON : Ignores effect address
2	Result message	OFF : Returns the appropriate result message *ON : Always returns a positive result message
1	(Currently not in use)	

Description

- **Select address**

  Before initiating communications, an external control unit such as a video editor will send a break and a select address to the unit to be controlled requesting a communication connection. If the select address received matches the unit's own address, it will accept connection by returning a positive answering message. If the addresses do not match, the unit will reject connection by answering negatively. Although the KM-5000's select address is 30 hex, setting this switch to ON allows arbitrary select addresses to be accepted.

- **Effect address**

  The effect address designates the bus group where the received command is validated. Set this switch to ON if connecting the KM-3000 or a Model 100-compatible video editor to the KM-5000.
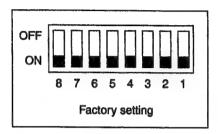
- **Result message**

  The KM-5000 main unit returns a result message indicating protocol error when it receives an unspecified command or a parameter outside its range. Set this switch to ON if the external control unit stops operating or behaves erratically in response to a protocol error message. When set to ON, the KM-5000 always returns a result message indicating normal reception even when an unknown command has been received.

  When this switch is set to OFF, the KM-5000 always returns the appropriate message after it has finished processing the command. In situations where internal processing takes longer than usual some external control units may switch to timeout mode and display a message of connection error before the result message has been received. Setting the switch to ON in this case makes timeout less likely to occur because the result message is sent immediately instead of after command processing.

SW4

SW4 controls various wipe pattern setting parameters.

```
OFF ┌─────────────────────┐
    │ ▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ │
ON  │ ▮ ▮ ▮ ▮ ▮ ▮ ▮ ▮ │
    └─────────────────────┘
      8 7 6 5 4 3 2 1

         Factory setting
```

Number	Setup items	Remarks (* denotes factory setting)		
8,7	Wipe code system on control unit	8 7 *KM-5000	8 7 KM-3000	8 7 Model 100
6,5	Wipe code system on ext. control connector 1 (TO EDITOR)	6 5 *KM-5000	6 5 KM-3000	6 5 Model 100
4,3	Wipe code system on ext. control connector 2 (EXTERNAL INTERFACE)	4 3 *KM-5000	4 3 KM-3000	4 3 Model 100
2	Reverse code on ext. control connector 1 (TO EDITOR)	OFF : Reverse code invalid *ON : Reverse code valid		
1	Reverse code on ext. control connector 2 (TO EXTERNAL INTERFACE)	OFF : Reverse code invalid *ON : Reverse code valid		

Description

- **Wipe code system**

  See the description of the pattern code system in the List of Wipe Patterns of the instruction book.

- **Reverse code**
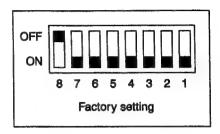
  When this switch is set to ON (reverse code valid), reverse wipe patterns can be turned on and off with the reverse numbers. Wipe patterns can be reversed by specifying adding 100 to the number of the normal pattern. This is done from an external control unit.

  When this switch is set to OFF (reverse code invalid), the current reverse mode is given priority. For instance, if a reverse-pattern wipe number is received with the reverse mode off, It is replaced with the number of the normal pattern.

  The corresponding software switch on the Control Unit is always ON and cannot be turned off.

7.1.4 SW5

SW5 is used for setting various other operation parameters.

Factory setting

Number	Setup items	Remarks (* denotes factory setting)
8	Destination	*OFF : PAL ON : NTSC
7	Resume on/off	OFF : Restores all items to their factory settings when power is turned on. *ON : The status at the time power was turned off is resumed when power is restored.
6	Resume mode	OFF : Reproduces the status of cross point, ME and DSK output sections in the resume mode. However, cross point check cannot be executed on this mode. *ON : Calls out the factory settings of cross point, ME and DSK output sections in the resume mode. Cross point check is valid.
5	Color limit on/off	OFF : Color limiting is not performed. *ON : Color limiting can be performed to prevent creation of any unspecified color.
4	Keying mode	OFF : Gain is mostly applied to clip level. *ON : Gain is applied at levels higher than clip level.
3	MI-F30 connection on/off	OFF : Sends no command to MI-F30 *ON : Sends a command to MI-F30
2	(Currently not in use)	
1	(Currently not in use)	

7.1.5 SW9

Do not change the position of SW9. This switch is only for use when a Z80 emulator (ICE) is connected.

At factory   : All OFF
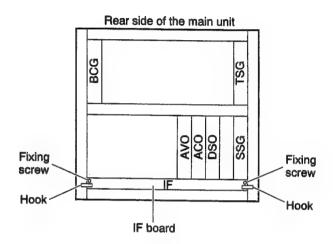
With the emulator connected : Only SW9-3 ON

7.2 Main Unit IF Board

7.2.1 How to take out the IF board
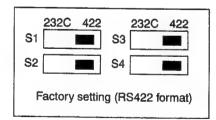
1) Turn the POWER switch to off.

2) Remove two fixing screws on the IF board.

3) Pull the right and left hooks retaining a board toward you at the same time, and then pull the board outward.

Rear side of the main unit

IF board

7.2.2 S1/2/3/4

S1/2/3/4 control the settings of communication equipment hardware connected to the Main Unit.
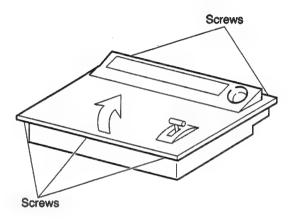
- S1   Control panel
- S2   Ext. control connector 1 (TO EDITOR)
- S3   Audio interface connector (AUDIO INTERFACE)
- S4   Ext. control connector 2 (EXTERNAL INTERFACE)

Factory setting (RS422 format)
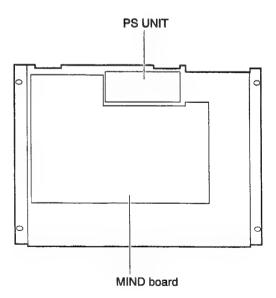
7.3 MIND Board in the Control Panel

7.3.1 | **How to open the control panel**

1) Turn off the POWER switch of the control unit.

2) Remove five screws from both sides and open the panel in the direction of the arrow.

Screws

Screws

3) The MIND board is located at bottom side.

PS UNIT

MIND board

7.3.2 SW2

Do not change the position of SW2. This switch is only for use when a Z80 emulator (ICE) is connected.
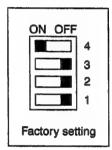
At factory   : All OFF
With the emulator connected : Only SW2-2 ON

7.3.3 SW3

SW3 is used to set various control unit operation parameters.

```
      ON  OFF
     ┌──────┐
     │ ███  │ 4
     │  ███ │ 3
     │  ███ │ 2
     │ ███  │ 1
     └──────┘
   Factory setting
```

Number	Set items	Remarks (* denotes factory setting)
4	Communications mode	OFF : Full duplex communications *ON : H duplex communications
3	Baud rate	*OFF : 38.4K ON : 9600
2	System operation	*OFF : System mode ON : Single operation mode
1	(Currently not in use)	

Description
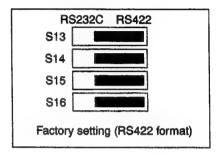
● System operation

In system operation mode, the control panel periodically checks the connection with the main unit. If the main unit loses power or the cable is disconnected, warning messages are shown on the control panel display and an attempt is made to restore the connection. When power is turned on, the control panel establishes communications with the main unit to implement control panel settings. Once in system operation mode, no operation can be executed unless the main unit is properly connected.

In single operation mode, the control unit is able to function without being connected to the main unit. This mode is used when explaining or demonstrating operation of the separate control panel, as well as for operation checks of the external control connectors (TO EDITOR, EXTERNAL INTERFACE and AUDIO INTERFACE). In the single operation mode, video lines near the V blanking signal may be disturbed because commands are not sent in sync with the operation of the main unit. Use of this mode should be limited to demonstration or checking.
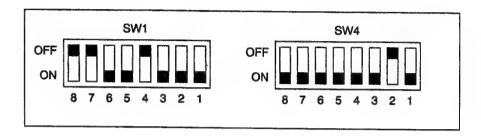
7.3.4 | **SW13/14/15/16**

Used to set the communications hardware standard on the control unit and the main unit. All switches must be set at the same positions.

```
        RS232C   RS422
S13  [    ████████    ]
S14  [      ██████     ]
S15  [    ████████    ]
S16  [    ████████    ]

  Factory setting (RS422 format)
```

7.4 Setup examples for connection with a video editor

7.4.1 | BVE-910/900 (SONY)

- Hardware standard (IF board S2) RS422
- Baud rate (SW1-8) 38.4Kbps
- Parity (SW1-7,6) ODD
- Stop bit (SW1-5) 1
- Select address (SW1-4) 30hex
- Effect address (SW1-3) To be ignored
- Result message (SW1-2) Always positive
- Wipe reverse code (SW4-2) Invalid
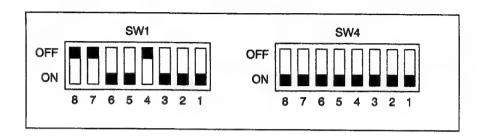
Operational limit

1) Selectable cross points are from BLACK (0) to channel 9

2) Execution of keys other than the pattern key (i.e., luminance key, chroma key and EXT key) must be explicitly specified with the SOURCE button on the control panel. This is necessary because the editor does not explicitly specify which key is to be executed.

3) BKGD + KEY effect at NEXT TRANSITION is not possible because it is not supported by the editor.

4) BKGD exchange behind the selected M/E key is not possible. This is because the key is forcibly undone by the ALL STOP command sent from the editor.

5) M/E effect with DSK ON is not available. This is because DSK is forcibly undone by the ALL STOP command sent from the editor.

3) to 5) are possible when operated directly from the control unit between the start of preroll and entering of the IN point.

RM-G870 (JVC)

- Hardware standard (IF board S2)   RS422
- Baud rate (SW1-8)   38.4 Kbps
- Parity (SW1-7, 6)   ODD
- Stop bit (SW1-5)   I
- Select address (SW1-4)   30 hex
- Effect address (SW1-3)   To be ignored
- Result message (SW1-2)   Always positive
- Wipe reverse code (SW4-2)   Valid

Operational limit
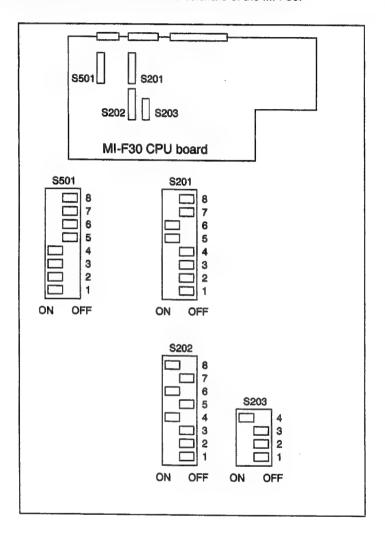
1) Selectable cross points are from BLACK (0) to channel 9

7.5 Connection with MI-F30

When connecting the MI-F30, internal switches must be set as indicated below. The DIP switches on the KM-5000 (SW3 on the main unit CPU board and S3 on the IF board) may be left at the factory settings. Make sure to use the version 1.03 or later as the software of the MI-F30.

MI-F30 CPU board

Major setting items

• Hardware standard (S501)	RS422 (factory setting)
• Effect address (S201-8...2)	30 hex (factory setting)
• Operational mode (S202-8)	Editor mode
• Effect address (S202-7)	To be ignored (factory setting)
• Service mode (S202-6)	ON (communicable without sending a break)
• Frame (S202-4)	PAL (factory setting)
• Baud rate (S203)	38.4 Kbps

Use the factory setting for other setting items.

8. SPECIFICATIONS

General					
Power requirement	MAIN UNIT	230V to 240V	AC±10%	50/60Hz	
	CONTROL UNIT	100V to 240V	AC±10%	50/60Hz	
Power consumption	MAIN UNIT	max. 270W			
	CONTROL UNIT	max. 30W			
Operating temperature	+5°C to +40°C				
Humidity(relative)	10% to 90% (non-condesing)				
Weight	MAIN UNIT	30 kg			
	CONTROL UNIT	7.3 kg			
Dimension (W x H x D)	MAIN UNIT	482 mm x 456.5 mm x 563 mm			
	CONTROL UNIT	482 mm x 135.5 mm x 355 mm			

Video System

Television standard	625/50
Digital video paths	8-bit resolution
Digital key paths	8-bit resolution
Digital mixer	10-bit x 9-bit mixer with 18-bit precision; dither added to round to 8 bit out
Overall delay input/program output	3 line <delay <4 line 5 line <delay <6 line (using KM-BK5002)
Signal processing video	4 : 2 : 2 in conformity with CCIR601

Inputs

12 primary video inputs

*Analog component (option)

Y	1.0V(p-p)
Pb	0.7V(p-p)
Pr	0.7V(p-p)

EBU standard level, BNC x3, 75 ohm

*Parallel digital (option)
  CCIR-656 parallel D-sub 25pin x1
*Seriall digital (option)
  CCIR-656 serial component   BNC x1, 75 ohm
*Analog composite (option)
  PAL-VBS 1.0V(p-p)   BNC x1, 75 ohm

6 external key inputs

*Analog key
  VS 1V(p-p) or KEY 0.7V(p-p) and sync 0.3 – 4.0V(p-p) (switchable)
  BNC x2, 75 ohm
*Parallel digital (option)
  CCIR-656 parallel D-sub 25pin x1
*Serial digital (option)
  CCIR-656 serial component   BNC x1, 75 ohm

Autophasing range   +62.5μs(delay)/–64.0μs(advance)

Gen-lock   Composite analog
  B. B   0.45V(p-p) ±30% 75 ohm or loop through, BNC x2

SPECIFICATIONS

Outputs

Program output
(3 slots available for PGM)

Analog component (standard)
 Y   1.0V(p-p) ⎤
 Pb   0.7V(p-p) ⎥ EBU standard level
 Pr   0.7V(p-p) ⎦
 BNC x6, 75 ohm, 2 outputs per 1 module
Serial digital (standard)
 CCIR-656 serial, 75 ohm, BNC x3, 3 outputs per 1 module
Parallel digital (option)
 CCIR-656 parallel, D-sub 25pin x2, 2 outputs per 1 module

Preview output

Analog composite (standard)
 VBS 1.0V(p-p) 75 ohm, BNC x2, 2 outputs per 1 module

Key output (option)

Analog   Y 1.0V(p-p) 75 ohm BNC x1
              or
Serial digital   CCIR-656 serial, 75 ohm, BNC x3
              or
Parallel digital   CCIR-656 parallel, D-sub 25pin x2

Aux-1, -2 outputs (option)

Analog component
 Y   1.0V(p-p) ⎤
 Pb   0.7V(p-p) ⎥ EBU standard level
 Pr   0.7V(p-p) ⎦
 BNC x6, 75 ohm, 2 outputs per 1 module
              or
 Seriall digital CCIR-656 serial, 75 ohm, BNC x3 3 outputs
 per 1 module
              or
 Parallel digital CCIR-656 parallel, D-sub 25pin x2, 2 outputs
 per 1 module

Black burst

0.45V(p-p) 75 ohm BNC x3

Interface

12 tally outputs

Dry contact or voltage supply (selectable) terminal

4 GPI input

TTL with optocoupler control for M/E,DSK,FTB,
KEY PRIORITY EXCHANGE

4 serial comunication ports

Control unit	RS-422 or RS-232C D-sub 9pin
Editor	RS-422 or RS-232C D-sub 9pin
Audio	RS-422 or RS-232C D-sub 9pin
External	RS-422 or RS-232C D-sub 9pin

Analog component inputs/output

Frequency response

Y: 100kHz to 5.75MHz ±0.5dB
Pb/Pr: 100kHz to 2.75MHz ±0.5dB

S/N (p-p/rms)

Y: 56dB (200kHz ~ 5MHz)

Y/Pb timing

Less than 20ns

Optional module

Analog component input module KM-BK5001

Analog composite input module KM-BK5002

Serial digital input module KM-BK5003

Parallel digital input module KM-BK5004

Analog key input module KM-BK5005

Analog component output module KM-BK5011

Analog composite output module KM-BK5012

Serial digital output module KM-BK5013

Parallel digital output module KM-BK5014

Analog key output module KM-BK5015

Accessories

Comunication cable	SCV1423-10M	x 1
Termination Plug	SCV0286-001	x 1
Power cable	QMP4908-250	x 2
Title sheet	SC31117-001	x 1

JVC

VICTOR COMPANY OF JAPAN. LIMITED

SECTION 1
DISASSEMBLY AND REPLACEMENT

1.1 REPLACEMENT OF FUSE

Before replacing any fuse, make sure to investigate the reason why it blew out and to remove cause of the failure first in order to prevent trouble from spreading.

1.1.1 Control unit

1. Turn off the power switch of the control unit and disconnect the power cord from the AC outlet.
2. Open the control panel referring to "1.3.3 How to open control panel".
3. Then, a fuse on the PS unit in the bottom side is exposed.
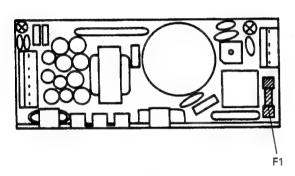
Fig. 1-1

When replacing the fuse, make sure to use new one of the specified part number for safety and protection of the set.

Symbol No.	Rating	Part No.
⚠ F1	T3.15 A, 250 V	QMF51A1-3R15

1.1.2 Main unit

1. Turn off the power switch of the main unit and disconnect the power cord from the AC outlet.
2. Open the control panel referring to "1.4.1 How to remove front cover".
3. Then, seven fuses on the PS frame are exposed.
4. Remove the fuse retaining cap with an ordinary (–) screwdriver and replace the fuse that blew out with new one.
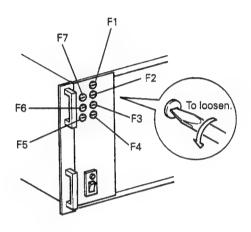
Fig. 1-2

When replacing a fuse, make sure to use new one of the specified part number for safety and protection of the set.

Symbol No.	Rating	Part No.
⚠ F1	T3.15 A, 250 V	QMF51A2-3R15
⚠ F2	T10 A, 250 V	QMF61M1-100
⚠ F3	T10 A, 250 V	QMF61M1-100
⚠ F4	T10 A, 250 V	QMF61M1-100
⚠ F5	T10 A, 250 V	QMF61M1-100
⚠ F6	T2 A, 250 V	QMF61U1-2R0
⚠ F7	T10 A, 250 V	QMF61M1-100

1.2 REPLACEMENT OF IC ROM

1. For removing the IC ROM, it is recommended to use a special tool, however, two small screwdrivers are substitutable for it.
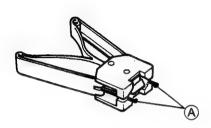
Fig. 1-3 Example of special tool

2. Insert the portions Ⓐ of the special tool into the notches Ⓑ of the IC socket to pick up the IC. When using small screwdrivers, insert their tips into the notches Ⓑ respectively and pick up the IC with the two screwdrivers.

Fig. 1-4
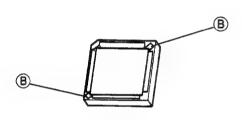
3. When putting in a new IC for replacement, make sure of its orientation and insert it gently into the IC socket with fingers keeping the IC level with the board surface.
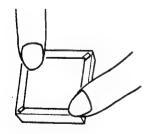
Fig. 1-5

1.3 CONTROL UNIT

1.3.1 Removal of control knob

1. For removing a control knob, remove its cap first and turn the nut as illustrated below.

To loosen.   To tighten.
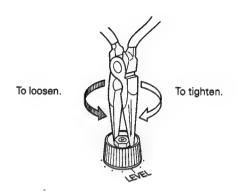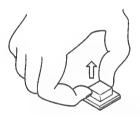
Fig. 1-6

1.3.2 Replacement of assembly lamp

1. Assembly lamp of small button
   Replace an assembly lamp of a small button as illustrated below.

Remove the cap with fingers.

Take the assembly lamp out of the cap and replace it with new one. Then, put back the cap with the new assembly lamp as before.

Assembly lamp
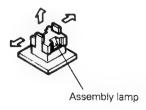
Fig. 1-7

2. Assembly lamp of large button
Remove the cover and the cap in this order, and then take the assembly lamp out of the cap for replacement. After replacement, put the parts together with referring to the figure below.

When putting back the assembled parts to the socket after lamp replacement, pay attention to the orientation of the slit of the cap so as to match the stopper of the socket, and insert the cap into the socket.
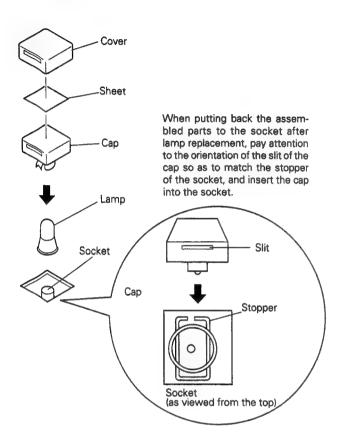
Fig. 1-8

1.3.3 How to open control panel

1. Remove five screws ① from both sides and open the panel in the direction of the arrow.
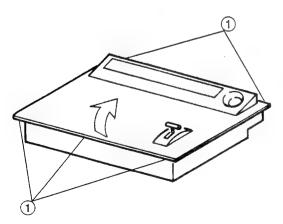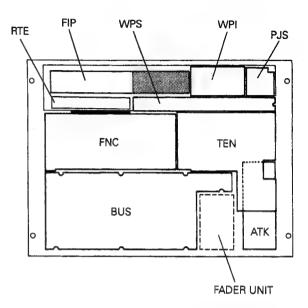
Fig. 1-9

1.3.4 Layout of boards

Warning : Be careful of the shaded part (▨) since there is a high tension (100 V appox.) generated.

Fig. 1-10 Panel side (perspective)
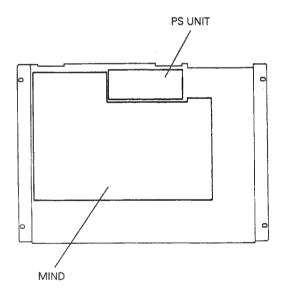
Fig. 1-11 Bottom side

1.3.5 Replacement of button (large) assembly

1. There are two large button assemblies. One indicated by Ⓒ in the figure below is on the BUS board and the other indicated by Ⓓ is on the ATK board. These two button assemblies Ⓒ and Ⓓ are different from each other in the way of removal.
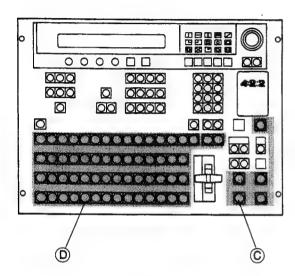
Fig. 1-12

2. Open the control panel referring to "1.3.3 How to open control panel".
3. To remove the button assembly Ⓓ, insert a screwdriver into the hole of the ATK board to remove three screws ② one after another, and then remove the ATK board together with the bracket.
   To remove the button assembly Ⓒ, remove the BUS board together with the bracket in the same manner as mentioned for the button assembly Ⓓ.
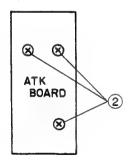
Fig. 1-13 To remove button assembly Ⓓ from ATK board

4. The button assembly Ⓓ on the ATK board can be replaced without removal of the bracket from the board. In concrete, remove the cover, sheet and cap of respective buttons first and then replace the button assembly with new one.
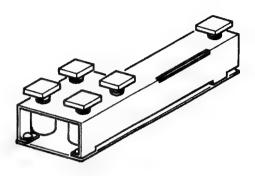
Fig. 1-14 Button assembly Ⓓ

5. To replace the button assembly Ⓒ, remove the cover, sheet and cap of respective buttons in this order.
6. Loosen four screws ③ appearing on the bracket and slide the upper bracket E in the direction of the arrow to remove it from the BUS board. Then, replace the button assembly Ⓒ.
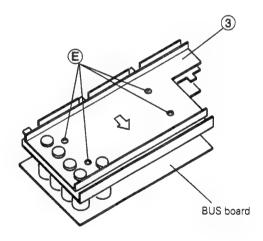
Fig. 1-15 To remove button assembly C

1.3.6 Fader lever

a. Removal of fader lever assembly

1. Remove a screw ④ (with a washer) and then remove the knob ⑤.

Fig. 1-16
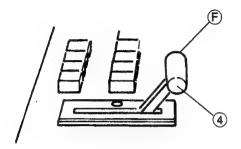
2. Open the control panel referring to "1.3.3 How to open control panel" and remove four screws ⑤.
3. Pull the fader lever assembly toward you to remove it.
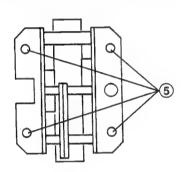
Fig. 1-17

b. Adjustment of fader lever torque

1. Torque of the fader lever is adjustable with the screw ⑥.
   - Turn the screw ⑥ clockwise (to H side) to make the torque high.
   - Turn the screw ⑥ counterclockwise (to L side) to make the torque low.
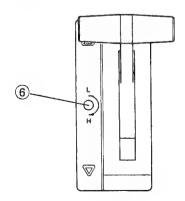
Fig. 1-18

1.4 MAIN UNIT

1.4.1 How to remove front cover

1. Turn four snap lock screws ⑦ counterclockwise at an angle of 90í with an ordinary (–) screwdriver, and remove the front cover.
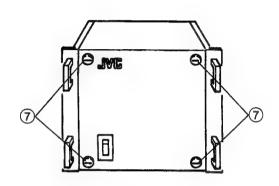
Fig. 1-19

1.4.2 How to remove top cover

1. Remove four screws ⑧ to remove the top cover.
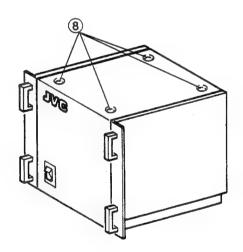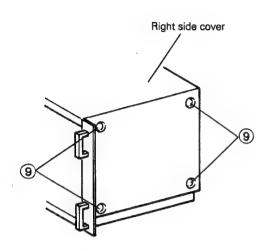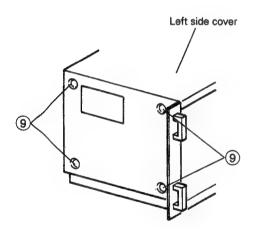
Fig. 1-20

1.4.3 How to remove side cover

1. Remove four screws ⑨ to remove a side cover. (This procedure applies to both the right and left side covers.)

(a) Right side cover

(b) Left side cover

Fig. 1-21

1.4.4 How to remove boards

a. Arrangement of boards
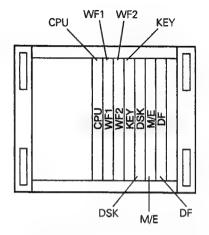
Fig. 1-22 Boards in the front side
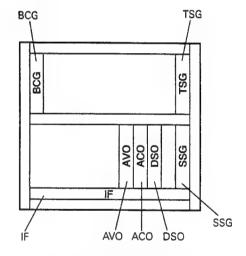
Fig. 1-23 Boards in the rear side
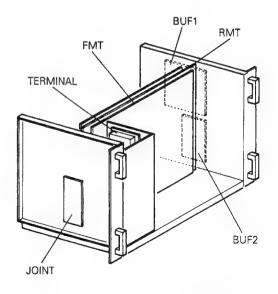
Fig. 1-24 Top view of boards arrangement

1-6

b. How to take out plug-in board

1. Remove the front cover referring to "1.4.1 How to remove front cover".
2. Pull the upper and lower hooks Ⓖ retaining a board toward you at the same time, and then pull the board outward. The IF board and boards in the rear side can be taken out in the same manner.
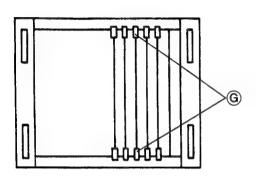
Fig. 1-25

c. How to take out BUFFER-1 and BUFFER-2 boards

1. Remove six screws ⑩ and take out the side shield (right side).
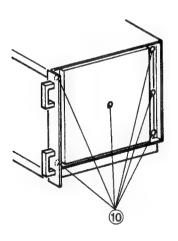
Fig. 1-26

2. Remove two screws ⑪ and disconnect two connectors Ⓗ of the BUFFER-1 board. Then the board can be taken out. The BUFFER-2 board can be taken out in the same manner (number of screw to remove is one).
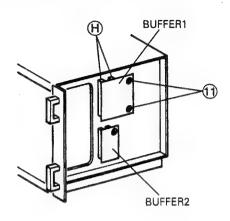
Fig. 1-27

d. How to remove JOINT board

1. Remove six screws ⑫ and take out the side shield (left side).
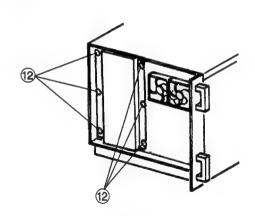
Fig. 1-28

2. Disconnect two connectors of the JOINT board and it can be taken out.
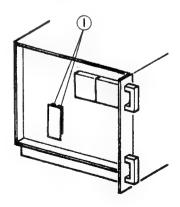
Fig. 1-29

1.5 Performances of KM-5000

- The following phenomena are not troubles but result from the peculiarity of the KM-5000 or connected equipment.

1. When the BORDER of a wipe pattern is set to "0" position, a border may appear in the picture because the border width which is divided into 256 steps is selected just in 100 steps by the control. Therefore, "0" indication of the border width does not represent the actual "0" step of the border width.
2. When adjusting the H. PHASE on the CPU board whose H. phase is generally adjusted at a unit of 74ns for a step, H. phase is sometimes changed by 400ns approximately at a time because of a chattering generated by a switch operation. In such an event, turn the H. PHASE control in the reverse direction little by little to accomplish a correct adjustment.
3. When an RM-G870 is connected, it is impossible to set a value of more than "10" for the "CROSS POINT ASSIGN".
4. When a BVE-900 is connected, it is impossible to set a value of more than "10" for the "CROSS POINT ASSIGN" for the reason of the specifications of the BVE-900.
5. When a BVE-900 is connected, the "LUM KEY" cannot be set after the "PTN KEY" is set by the BVE-900.
6. When an input signal to the AVI board is wiped by an input signal to the ACI board, the former is 2H behind the latter. This is caused by Y/C separation of the input signal to the AVI board by the comb filter circuit.

1.6 EP-ROM

IC301 (MBM27C512-20CZ : FUJITSU) on the MIND board, IC 10 and IC33 (MBM27C512-20CZ : FUJITSU) on the CPU board are the EP-ROM whose control program is written on the memory.

The control program cannot be changed unless it was changed on the whole. For reference, the original IC MBM27C512-20CZ has no program written inside it, therefore, if it needs replacement, place and order for it with the program number, which is listed in the electrical parts list of the service manual. When making an order, make sure to do it to JVC not to Fujitsu since the latter cannot ship it with the control program.

1.7 BACKUP BATTERY (Ni-Cd alkaline battery)

There is a Ni-Cd alkaline battery on the CPU board loaded as a backup battery to protect data stored in the memory from erasing when the power switch is turned off. After the power switch is turned off, data stored in the memory will be held for one hour approx. When the Ni-Cd alkaline battery needs replacement, unsolder the battery first and replace it with new one. Carefully dispose of the old battery not to make it become a pollutant against environment.

1.8 Optional Plug-in boards

MODEL NAME	MODEL No.
ACI	KM-BK5001
AVI	KM-BK5002
DSI	KM-BK5003
DPI	KM-BK5004
AKI	KM-BK5005
ACO	KM-BK5011
AVO	KM-BK5012
DSO	KM-BK5013
DPO	KM-BK5014
AKO	KM-BK5015

SECTION 2
ELECTRICAL ADJUSTMENT

2.1 REQUIRED EQUIPMENT AND STANDARD SETUP FOR ELECTRICAL ADJUSTMENT

2.1.1 Neccessary instruments

1. Digital voltmeter
2. Oscilloscope (dual trace type is preferable)
3. Frequency counter
4. Analog component signal generator
5. Sync signal generator

2.1.2 Standard setup

1. KM-5000M standard assembly
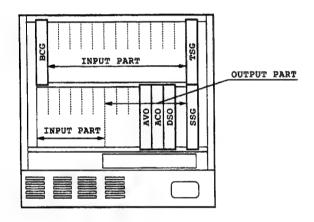
Fig. 2-1 Standard module of KM-5000M

2. Switch setting on the CPU board

SW No.	Setting position	Description
S1-1	ON	
-2	ON	
-3	ON	
-4	OFF	To set communication status of TO EDITOR terminal
-5	ON	
-6	ON	
-7	OFF	
-8	OFF	
S2-1	ON	
-2	ON	
-3	ON	
-4	OFF	To set communication status of EXTERNAL INTERFACE terminal
-5	ON	
-6	ON	
-7	OFF	
-8	OFF	
S3-1	ON	
-2	ON	
-3	ON	
-4	OFF	To set communication status of AUDIO INTER-FACE terminal
-5	ON	
-6	ON	
-7	OFF	
-8	OFF	
S4-1	ON	
-2	ON	
-3	ON	
-4	ON	To set WIPE PATTERN operation
-5	ON	
-6	ON	
-7	ON	
-8	OFF	
S5-1	ON	
-2	ON	
-3	ON	
-4	ON	To set various operations
-5	ON	
-6	ON	
-7	ON	
-8	OFF	NTSC (ON)/PAL (OFF)
S6	Reset type	H. PHASE
S7	Reset type	SPARE
S8	Reset type	CPU HARD RESET
S9-1	OFF	For Debugging
-2	OFF	
-3	OFF	
-4	OFF	
S11	Marking side	Switching not allowed (baud rate)
S12	Marking side	Switching not allowed (baud rate)

3. Switch setting on the WF-1 board

SW No.	Setting position	Description	
S1-1	OFF	MSB HP7	
-2	OFF	HP6	
-3	ON	HP5	
-4	ON	HP4	H. position
-5	ON	HP3	
-6	OFF	HP2	
-7	ON	HP1	
-8	OFF	LSB PRO	

4. Switch setting on the KEY board

SW No.	Setting position	Description	
S1	KEY	KEY/DSK selection	
S3-1	OFF	Not used	
-2	OFF	Not used	
-3	ON	MSB KFDL5	
-4	OFF	KFDL4	KEY FILL
-5	OFF	KFDL3	DELAY
-6	OFF	KFDL2	setting
-7	ON	KFDL1	
-8	ON	LSB KFDL0	
S5	KEY	KEY/DSK selection	
S6	KEY	KEY/DSK selection	
S7-1	ON	MSB BPDL7	
-2	ON	BPDL6	
-3	OFF	BPDL5	BY PASS
-4	OFF	BPDL4	KEY DELAY
-5	ON	BPDL3	setting
-6	OFF	BPDL2	
-7	ON	BPDL1	
-8	OFF	LSB BPDL0	
S8	L	KEY ST CENTER/LOW selection	
S9	CPU	KEY SHAPE CPU/OFF selection	
S10	ON	KEY LPF ON/CPU selection	
S11	FILL	KEY FILL TEST/FILL selection	

5. Switch setting on the DSK board

SW No.	Setting position	Description	
S1	DSK	KEY/DSK selection	
S3-1	OFF	Not used	
-2	OFF	Not used	
-3	ON	MSB KFDL5	
-4	OFF	KFDL4	KEY FILL
-5	OFF	KFDL3	DELAY
-6	OFF	KFDL2	setting
-7	ON	KFDL1	
-8	ON	LSB KFDL0	
S5	DSK	KEY/DSK selection	
S6	DSK	KEY/DSK selection	
S7-1	ON	MSB BPDL7	
-2	ON	BPDL6	
-3	OFF	BPDL5	BYPASS KEY
-4	OFF	BPDL4	DELAY
-5	ON	BPDL3	setting
-6	OFF	BPDL2	
-7	ON	BPDL1	
-8	OFF	LSB BPDL0	
S8	L	KEY ST CENTER/LOW selection	
S9	CPU	KEY SHAPE CPU/OFF selection	
S10	ON	KEY LPF ON/CPU selection	
S11	FILL	KEY FILL TEST/FILL selection	

6. Switch setting on the M/E board

SW No.	Setting position	Description		
S1-1	OFF	MSB DL7		
-2	ON	DL6		
-3	OFF	DL5		
-4	OFF	DL4	PGM-PST	
-5	ON	DL3	DELAY setting	
-6	ON	DL2		
-7	OFF	DL1		
-8	OFF	LSB DL0		
S2-1	ON	MSB DL7		
-2	OFF	DL6		
-3	ON	DL5		
-4	OFF	DL4	KEY FILL DELAY	
-5	ON	DL3	setting	
-6	OFF	DL2		
-7	OFF	DL1		
-8	ON	LSB DL0		
S3-TEST	OPEN	For TEST		
-PBM	SHORT	PBM factor: Hi in open		
-BDR	SHORT	BDR factor: Hi in open		
-PST	SHORT	PST factor: Hi in open		
-KEY	SHORT	KEY factor: Hi in open		
-KBDR	SHORT	KBDR factor: Hi in open		

7. Switch setting on the D/F board

SW No.	Setting position	Description		
S1-1	ON	MSB DL7		
-2	OFF	DL6		
-3	ON	DL5		
-4	ON	DL4	DSK FILL	
-5	OFF	DL3	DELAY setting	
-6	OFF	DL2		
-7	OFF	DL1		
-8	ON	LSB DL0		
S2-1	ON	MSB DL7		
-2	ON	DL6		
-3	OFF	DL5		
-4	ON	DL4	AUX-1, -2	
-5	ON	DL3	DELAY setting	
-6	OFF	DL2		
-7	ON	DL1		
-8	ON	LSB DL0		
S9-1	ON	MSB DL7		
-2	ON	DL6		
-3	OFF	DL5		
-4	ON	DL4	BKGD DELAY	
-5	OFF	DL3	setting	
-6	ON	DL2		
-7	OFF	DL1		
-8	OFF	LSB DL0		
S3-1	ON	MSB DL7		
-2	OFF	DL6		
-3	ON	DL5		
-4	OFF	DL4	TRS DELAY	
-5	OFF	DL3	setting	
-6	OFF	DL2		
-7	OFF	DL1		
-8	OFF	LSB DL0		
S4-1	ON	MSB DL3		
-2	ON	DL2	DSK DELAY	
-3	OFF	DL1	setting	
-4	OFF	LSB DL0		
S5-BKGD	SHORT	BKGD factor: Hi in open		
-BDR	SHORT	BDR factor: Hi in open		
-DSK	SHORT	DSK factor: Hi in open		
-TEST	SHORT	For TEST		
S6-1	OFF	MSB DL3		
-2	ON	DL2	KEY OUT	
-3	OFF	DL1	DELAY setting	
-4	ON	LSB DL0		
S8	625	525/625SYSTEM setting		
S10	ON	DITHER ON/OFF		

8. Switch setting on the IF board

SW No.	Setting position	Description
S1	422	RS-422/RS-232C selection, CONTROL PANEL
S2	422	RS-422/RS-232C selection, EDITOR
S3	422	RS-422/RS-232C selection, AUDIO I/F
S4	422	RS-422/RS-232C selection, EXT. CONTROL

9. Switch setting on the TSG board

SW No.	Setting position	Description
S1	1	MULTIPLEX Timing
S2-1	OFF	W0 Waveform selection when S2-3 is off.
-2	ON	W1 Waveform selection when S2-3 is off.
-3	ON	TEST WAVE/CPU manual selection
-4	OFF	50/60 system selection

```
ON ┐      OFF ┐           ON ┐        OFF ┐ Multi-
   ├ Black    ├ Color bar    ├ Ramp       ├ burst
ON ┘      ON ┘           OFF ┘        OFF ┘
```

ON :   CPU control selection   OFF : Waveform selection with S2-1 and S2-2

ON :   525/60 system   OFF : 625/50 system

10. Switch setting on the BCG board

SW No.	Setting position	Description
S1-1	ON	DATA OUT Timing
-2	ON	
-3	ON	
-4	ON	
S2	ON	DITHER ON/OFF selection

11. Switch setting on the DPI board

SW No.	Setting position	Description
S1	1	DATA OUT Timing

12. Switch setting on the MIND board

SW No.	Setting position	Description
S2-1	OFF	Not used
-2	OFF	For Debugging
-3	OFF	
-4	OFF	
S3-1	OFF	Not used
-2	OFF	For Debugging
-3	OFF	
-4	OFF	
S11	Markinng side	Switchinng not allowed
S12	Markinng side	Switchinng not allowed
S13	Markinng side	RS-422/RS232C selection
S14	Markinng side	RS-422/RS232C selection
S15	Markinng side	RS-422/RS232C selection
S16	Markinng side	RS-422/RS232C selection

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

2.2 ADJUSTMENT OF POWER SUPPLY VOLTAGE

Note: Pull out the PS (power supply) frame of the KM-5000M. (MAIN UNIT)

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
1	+5 V power supply adjustment	Digital voltmeter	◎ Between V+ terminal of PS1 unit and chassis of KM-5000M ① V ADJ of PS1 unit ☆ 5 V	1) Adjust the VR to obtain the specified voltage at the measuring point.
2	+12 V power supply adjustment	Digital voltmeter	◎ Between V+ terminal of PS1 unit and chassis of KM-5000M ① V ADJ of PS1 unit ☆ 12 V	1) Adjust the VR to obtain the specified voltage at the measuring point.
3	-9 V power supply adjustment	Digital voltmeter	◎ Between F6 (fuse) terminal and chassis of KM-5000M ① V ADJ of PS3 unit ☆ -9 V	1) Adjust the VR to obtain the specified voltage at the measuring point.
4	-5 V power supply adjustment	Digital voltmeter	◎ Between V- terminal of PS4 unit and chassis of KM-5000M ① V ADJ of PS4 unit ☆ -5 V	1) Adjust the VR to obtain the specified voltage at the measuring point.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

2.3 ADJUSTMENT OF SC FREQUENCY (MAIN UNIT)

Note: • Remove the side covers and the side sealds.
  • Set S1 and S3 of the SSG board to the "P" position.
  • Nothing is connected to the REF-IN of the SSG board (INT mode).
  • Connect BB-1 output to Sync signal generator (GEN LOCK IN).
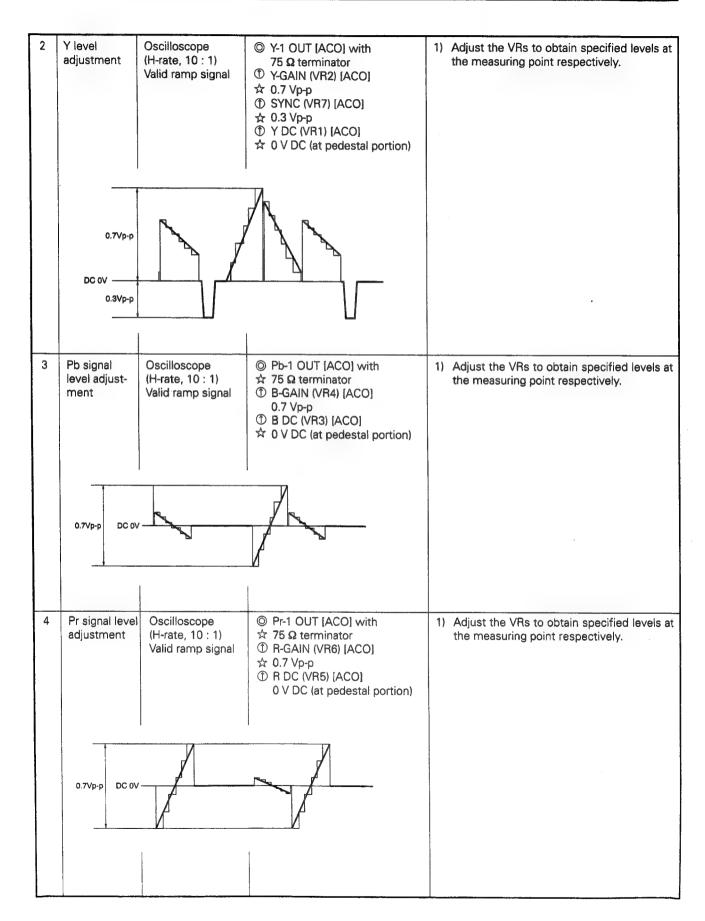
1	fsc adjustment	Frequency counter	◎ SC output of Sync signal generator connected with BB-1 output. ① 4 fsc (VC1) [SSG] ☆ 4.43361875 MHz	1) Adjust VC1 [SSG] to obtain the specified frequency at the measuring point.

2.4 ADJUSTMENT OF ACO BOARD (KM-BK5011) (OPTIONAL)

1	Preparation			1) Set switches on the ACO board as follows.

S1	I
S2	I
S3	OFF
S4	I
S5	I
S6	I
S7	P
S8-1	ON
S8-2	ON
S8-3	OFF
S8-4	OFF

2) Supply valid ramp waveform from the built-in signal generator.
  • When the lamp of the TEST GEN button of the KM-5000P is on, press the button once and press it again to turn it on. When the lamp of the TEST GEN button is off, press it to turn it on.
  • Turn the leftmost knob in the KM-5000P's control display to get "2" appearing in the display.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
2	Y level adjustment	Oscilloscope (H-rate, 10 : 1) Valid ramp signal	◎ Y-1 OUT [ACO] with 75 Ω terminator ① Y-GAIN (VR2) [ACO] ☆ 0.7 Vp-p ① SYNC (VR7) [ACO] ☆ 0.3 Vp-p ① Y DC (VR1) [ACO] ☆ 0 V DC (at pedestal portion)	1) Adjust the VRs to obtain specified levels at the measuring point respectively.
3	Pb signal level adjustment	Oscilloscope (H-rate, 10 : 1) Valid ramp signal	◎ Pb-1 OUT [ACO] with ☆ 75 Ω terminator ① B-GAIN (VR4) [ACO] 0.7 Vp-p ① B DC (VR3) [ACO] ☆ 0 V DC (at pedestal portion)	1) Adjust the VRs to obtain specified levels at the measuring point respectively.
4	Pr signal level adjustment	Oscilloscope (H-rate, 10 : 1) Valid ramp signal	◎ Pr-1 OUT [ACO] with ☆ 75 Ω terminator ① R-GAIN (VR6) [ACO] ☆ 0.7 Vp-p ① R DC (VR5) [ACO] 0 V DC (at pedestal portion)	1) Adjust the VRs to obtain specified levels at the measuring point respectively.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

2.5 ADJUSTMENT OF AVO BOARD (KM-BK5012) (OPTIONAL)
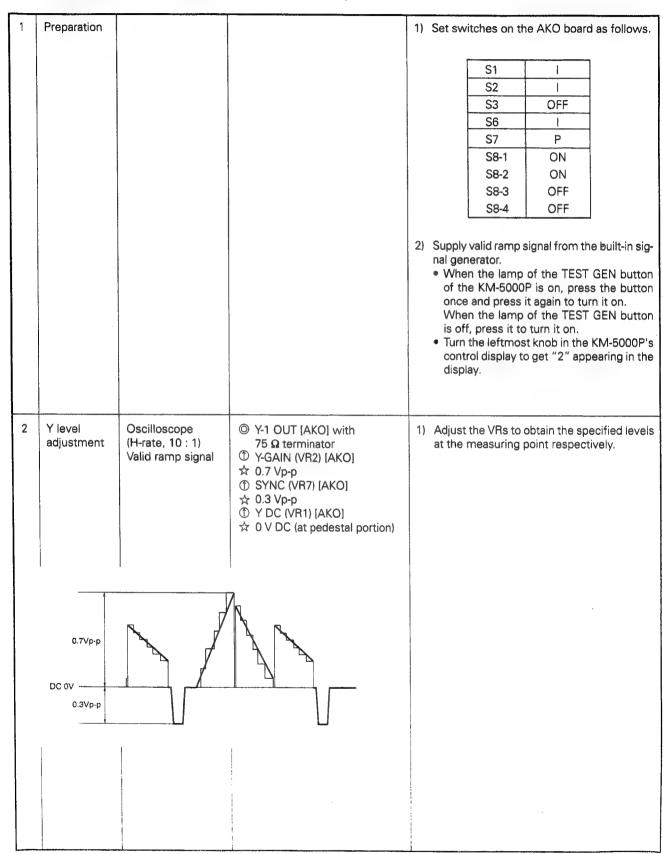
No.	Item	Measuring instruments & Input signals	Measuring point / Adjustment parts / Adjustment level	Adjustment procedure
1	Preparation			1) Set switches on the AV board as follows. | S1-1	ON
S1-2	ON
S1-3	ON
S1-4	ON
S2	I	 2) Supply color bars signal from the built-in signal generator. • When the lamp of the TEST GEN button of the KM-5000P is on, press the button once and press it again to turn it on. When the lamp of the TEST GEN button is off, press it to turn it on. • Turn the leftmost knob in the KM-5000P's control display to get "1" appearing in the display.
2	VBS level adjustment	Oscilloscope (H-rate, 10 : 1) Internal color bars signal	◎ VBS-1 OUT [AVO] with 75 Ω terminator ① GAIN (VR4) [AVO] ☆ 1 Vp-p ① DC (VR1) [AVO] ☆ 0 V DC 	1) Adjust the VRs to obtain specified levels at the measuring point respectively.

2.6 ADJUSTMENT OF DSO BOARD (KM-BK5013) (OPTIONAL)

No.	Item	Measuring instruments & Input signals	Measuring point / Adjustment parts / Adjustment level	Adjustment procedure
1	VCO free-run frequency adjustment	Frequency counter	◎ TP4 [DSO] ① F-ADJ (VR1) [DSO] ☆ 27 MHz	1) Set S1 on the DSO board to the "FREE RUN" position. 2) Adjust the VR to obtain the specified frequency at the measuring point. 3) Return S1 to the "LOCK" position.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

2.7 ADJUSTMENT OF AKO BOARD (KM-BK5015) (OPTIONAL)

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
1	Preparation			1) Set switches on the AKO board as follows. | S1	I
S2	I
S3	OFF
S6	I
S7	P
S8-1	ON
S8-2	ON
S8-3	OFF
S8-4	OFF	 2) Supply valid ramp signal from the built-in signal generator. • When the lamp of the TEST GEN button of the KM-5000P is on, press the button once and press it again to turn it on. When the lamp of the TEST GEN button is off, press it to turn it on. • Turn the leftmost knob in the KM-5000P's control display to get "2" appearing in the display.
2	Y level adjustment	Oscilloscope (H-rate, 10 : 1) Valid ramp signal	◎ Y-1 OUT [AKO] with 75 Ω terminator ① Y-GAIN (VR2) [AKO] ☆ 0.7 Vp-p ① SYNC (VR7) [AKO] ☆ 0.3 Vp-p ① Y DC (VR1) [AKO] ☆ 0 V DC (at pedestal portion)	1) Adjust the VRs to obtain the specified levels at the measuring point respectively.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

2.8 ADJUSTMENT OF ACI BOARD (KM-BK5001) (OPTIONAL)

Note: • A component signal generator is required for this adjustment.
 • It is prerequisite that the ACO board (KM-BK5011) has completely been adjusted.

No.	Item	Measuring instruments & Input signals	Measuring point / Adjustment parts / level	Adjustment procedure
1	Preparation			1) Set switches on the ACI board as follows. 2) Connect an analog component signal generator to the ACI board. 3) Supply 100 % color bars signal from the analog component signal generator.
2	Y level adjustment	Oscilloscope (H-rate, 10 : 1) Color bars signal of 100 % amplitude	◎ Y-1 OUT [ACO] (with 75 Ω terminator) ① Y GAIN (VR2) [ACI] ☆ 0.7 Vp-p ① Y PED (VR1) [ACI] ☆ Potential at pedestal portion is equalized with that of back porch portion.	1) Adjust the VRs to obtain the specified levels at the measuring point respectively.

Switch settings (step 1):

Switch	Setting
S1	I
S2	I
S3	I
S4	I
S5	I
S6	P
S7-1	OFF
S7-2	OFF
S7-3	ON
S7-4	ON
S7-5	OFF
S7-6	OFF
S7-7	ON
S7-8	OFF

0.7Vp-p

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
3	Pb signal level adjustment	Oscilloscope (H-rate, 10 : 1) Color bars signal of 100 % amplitude	◎ Pb-1 OUT [ACO] (with 75 Ω terminator) ① B GAIN (VR4) [ACI] ☆ 0.7 Vp-p ① B PED (VR3) [ACI] ☆ Potential at pedestal portion is equalized with that of blanking portion.	1) Adjust the VRs to obtain the specified levels at the measuring point respectively.
4	Pr signal level adjustment	Oscilloscope (H-rate, 10 : 1) Color bars signal of 100 % amplitude	◎ Pr-1 OUT [ACO] (with 75 Ω terminator) ① R GAIN (VR6) [ACI] ☆ 0.7 Vp-p ① R PED (VR5) [ACI] ☆ Potential at pedestal portion is equalized with that of blanking portion.	1) Adjust the VRs to obtain the specified levels at the measuring point respectively.

0.7Vp-p

0.7Vp-p

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
5	H. position adjustment	Oscilloscope (H-rate, 10 : 1) 3T, 2T pulse signals	◎ Y-1 OUT [ACO] (with 75 Ω terminator) ① S7-3, -4, -5, -6, -7, -8 [ACI] ☆ Match input signal to the ACI board with output signal of ACO board in the time from the sync. rise to the pulse peak.	1) Observe waveforms of input signal to the ACI board and output signal of the ACO board on the oscilloscope screen at the same time while setting the switches of S7-3 to S7-8 to ON or OFF respectively to match the two signals in the time (t) from the sync. rise to the pulse peak.

Note: Set S7-1 and S7-2 to OFF position.

2.9 ADJUSTMENT OF DSI BOARD (KM-BK5003) (OPTIONAL)

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
1	VCO free-run frequency adjustment	Frequency counter	◎ TP4 [DSI] ① F ADJ (VR1) [DSI] ☆ 27 MHz	1) Set S2 on the DSI board to "FREE RUN" position. 2) ADjust the VR to obtain the specified frequency at the measuring point. 3) Return S2 of the DSI board to "LOCK" position.

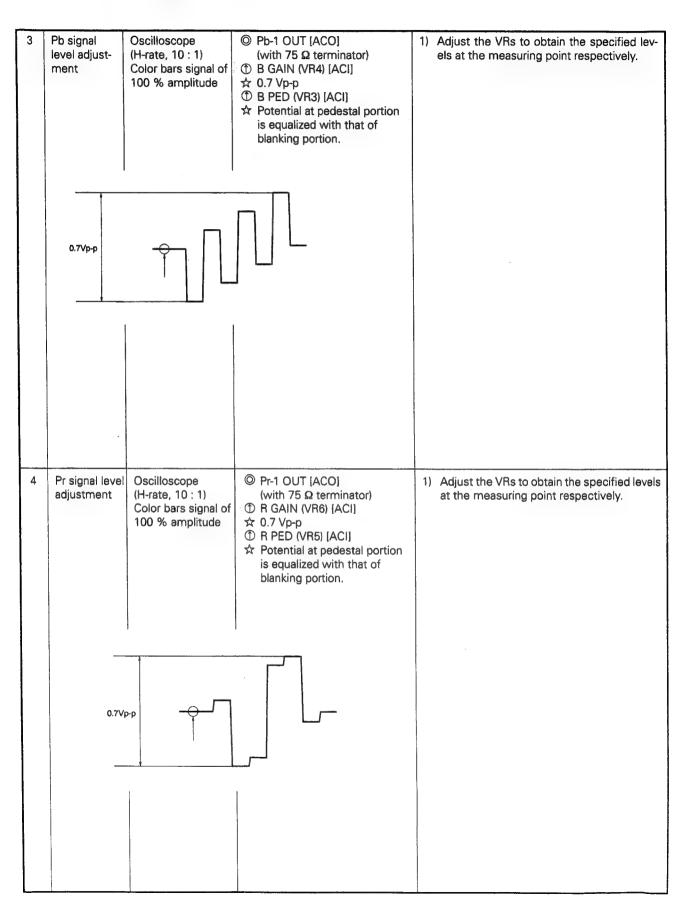| No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

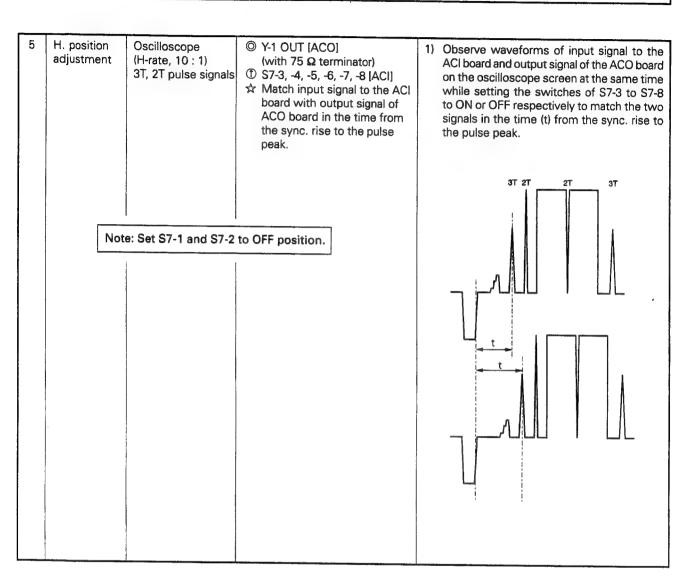## 2.10 ADJUSTMENT OF AKI BOARD (KM-BK5005) (OPTIONAL)

Note: • An analog component signal generator is required for this adjustment.
• It is prerequisite that the ACO board (KM-BK5011) has completely been adjusted.
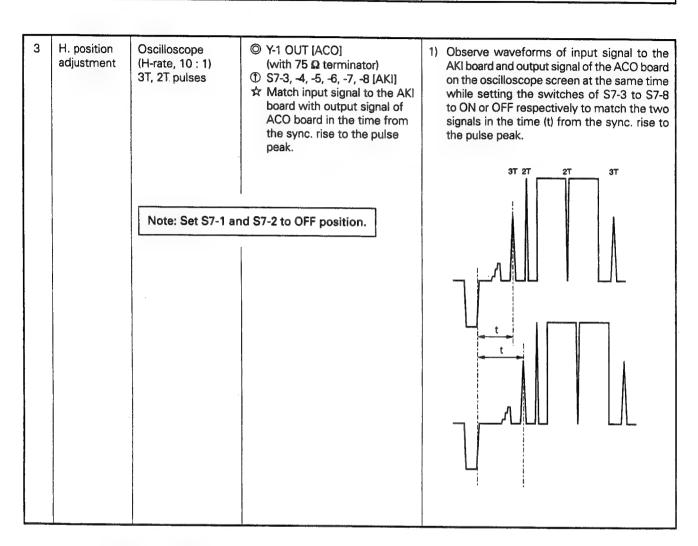
No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
1	Preparation			1) Set switches on the AKI board as follows. | S1	I
S2	I
S3	I
S6	P
S7-1	OFF
S7-2	OFF
S7-3	ON
S7-4	ON
S7-5	OFF
S7-6	OFF
S7-7	ON
S7-8	OFF	 2) Connect an analog component signal generator to the AKI board. 3) Supply 100 % color bars signal from the analog component signal generator.
2	Y level adjustment	Oscilloscope (H-rate, 10 : 1) Color bars signal of 100 % amplitude	◎ Y-1 OUT [ACO] (with 75 Ω terminator) ① Y GAIN (VR2) [AKI] ☆ 0.7 Vp-p ① Y PED (VR1) [AKI] ☆ Potential at pedestal portion is equalized with that of back porch portion of sync. signal. 0.7Vp-p	1) Adjust the VRs to obtain the specified levels at the measuring point respectively.

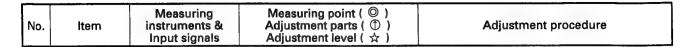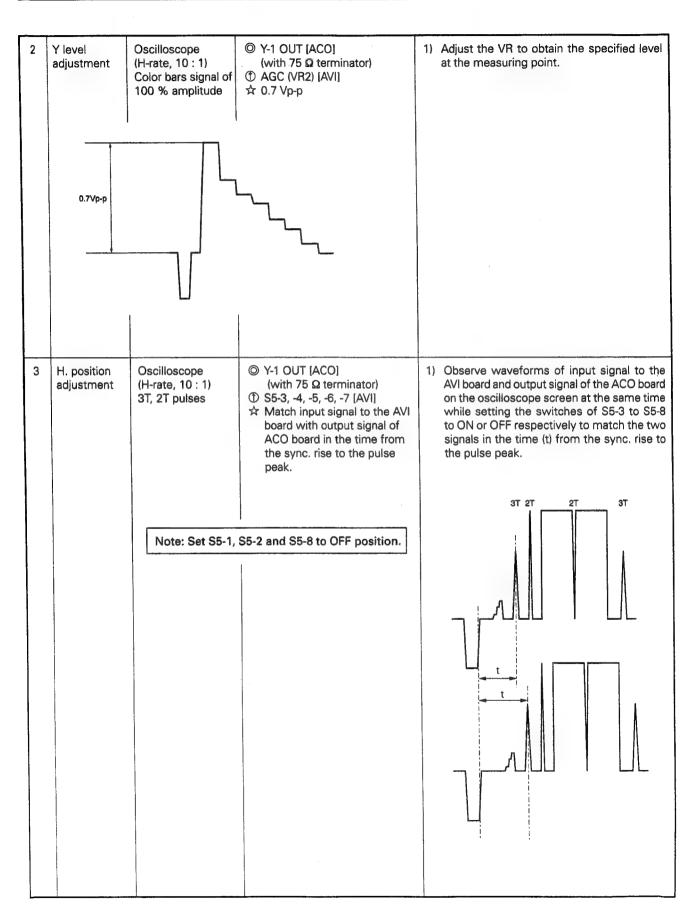| No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
3	H. position adjustment	Oscilloscope (H-rate, 10 : 1) 3T, 2T. pulses	◎ Y-1 OUT [ACO] (with 75 Ω terminator) ① S7-3, -4, -5, -6, -7, -8 [AKI] ☆ Match input signal to the AKI board with output signal of ACO board in the time from the sync. rise to the pulse peak. Note: Set S7-1 and S7-2 to OFF position.	1) Observe waveforms of input signal to the AKI board and output signal of the ACO board on the oscilloscope screen at the same time while setting the switches of S7-3 to S7-8 to ON or OFF respectively to match the two signals in the time (t) from the sync. rise to the pulse peak.

2.11 ADJUSTMENT OF AVI BOARD (KM-BK5002) (OPTIONAL)

Note: • An analog component signal generator is required for this adjustment.
   • It is prerequisite that the ACO board (KM-BK5011) has completely been adjusted.

1	Preparation			1) Set switches on the AVI board as follows.

S1	I
S2	P
S5-1	OFF
S5-2	OFF
S5-3	ON
S5-4	ON
S5-5	OFF
S5-6	OFF
S5-7	ON
S5-8	OFF

2) Connect an analog component signal generator to the AVI board.
3) Supply 100 % color bars signal from the analog component signal generator.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
2	Y level adjustment	Oscilloscope (H-rate, 10 : 1) Color bars signal of 100 % amplitude	◎ Y-1 OUT [ACO] (with 75 Ω terminator) ① AGC (VR2) [AVI] ☆ 0.7 Vp-p	1) Adjust the VR to obtain the specified level at the measuring point.
3	H. position adjustment	Oscilloscope (H-rate, 10 : 1) 3T, 2T pulses	◎ Y-1 OUT [ACO] (with 75 Ω terminator) ① S5-3, -4, -5, -6, -7 [AVI] ☆ Match input signal to the AVI board with output signal of ACO board in the time from the sync. rise to the pulse peak.	1) Observe waveforms of input signal to the AVI board and output signal of the ACO board on the oscilloscope screen at the same time while setting the switches of S5-3 to S5-8 to ON or OFF respectively to match the two signals in the time (t) from the sync. rise to the pulse peak.

0.7Vp-p

Note: Set S5-1, S5-2 and S5-8 to OFF position.

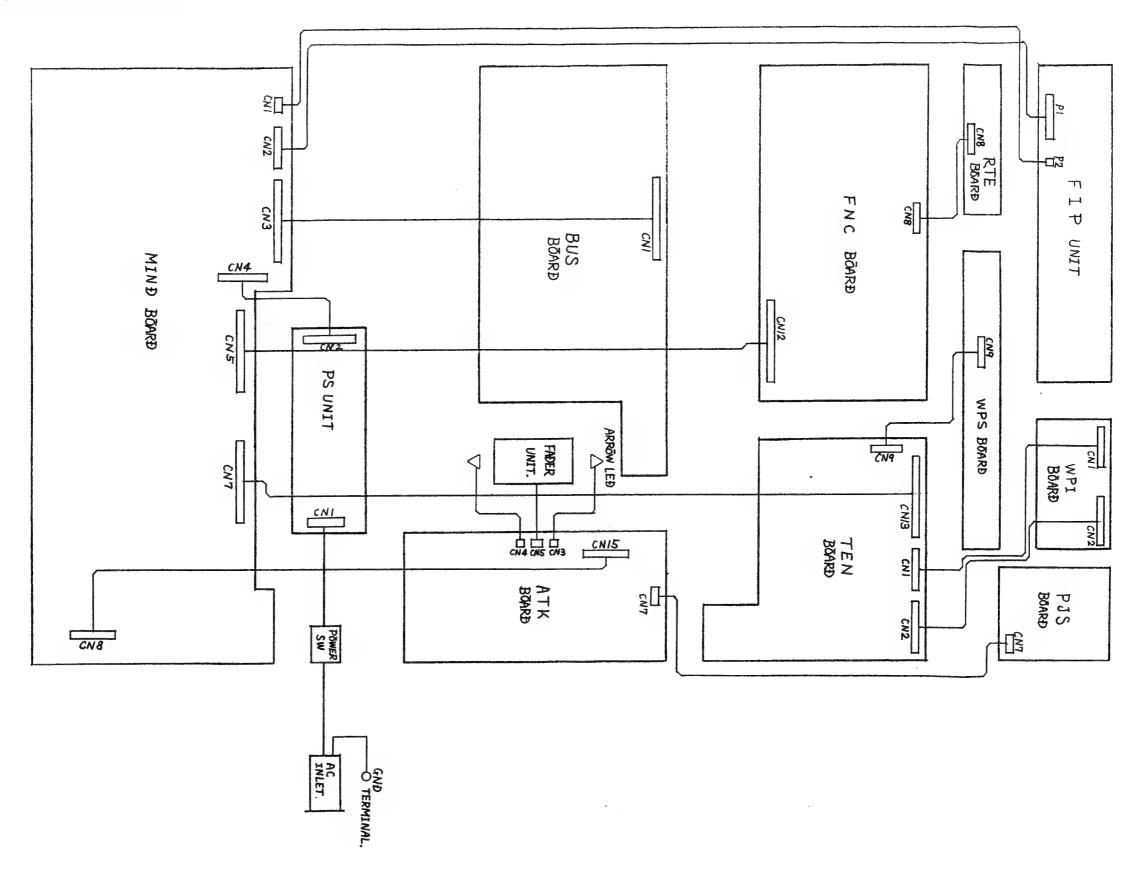3T 2T   2T   3T

t

t

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

2.12   ADJUSTMENT OF CONTROL UNIT (KM-5000P) (CONTROL UNIT)

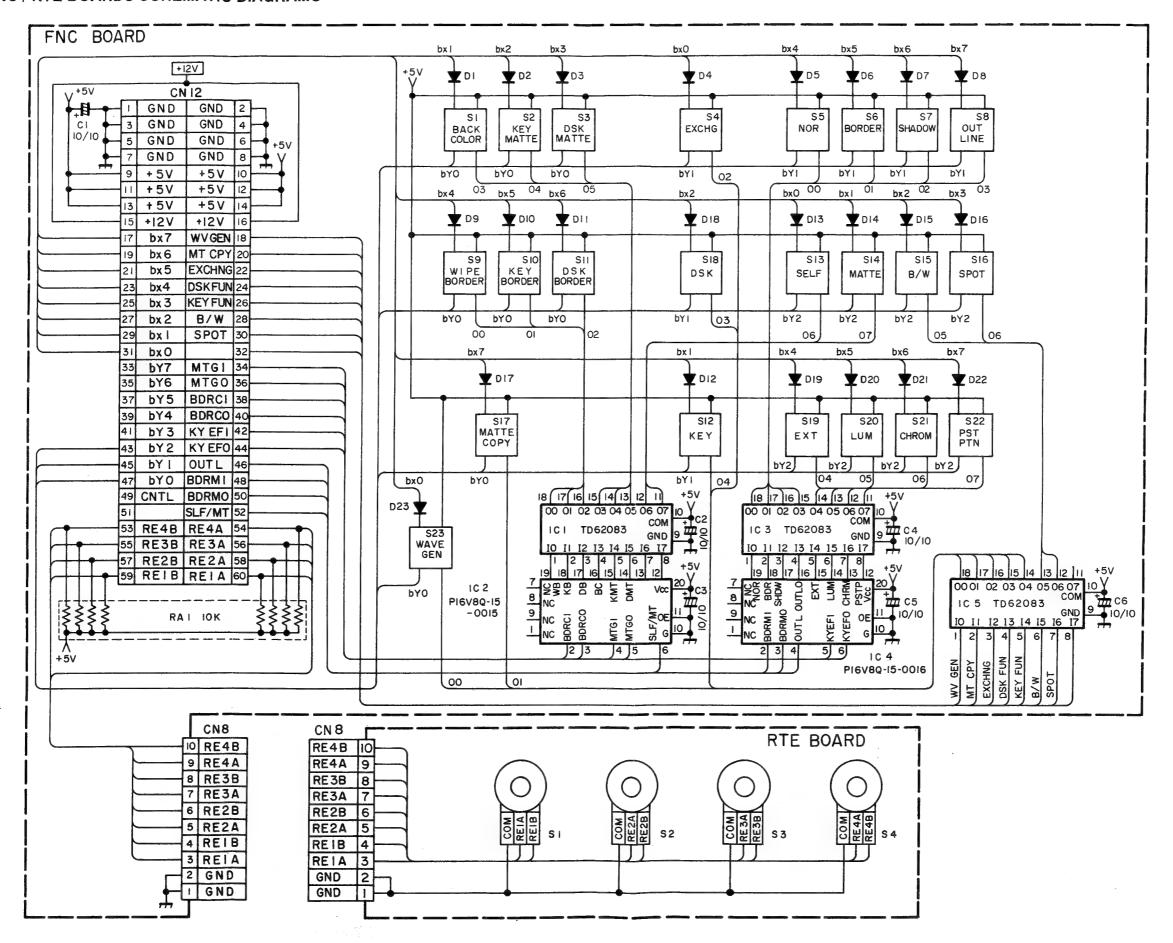| No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
1	Preparation			1) Set switches on the MIND board as follows. | S1	Automatic reset position
----	----
S2-1	OFF
S2-2	OFF
S2-3	OFF
S2-4	OFF
S3-1	OFF
S3-2	OFF*
S3-3	OFF
S3-4	ON
S11-S16	Marking invisible side	 * When S3-2 is set to ON, KM-5000P is individually adjustable.
2	Fader voltage adjustment	Digital voltmeter	◎ TP2 [MIND] ① FADER DYNAMIC RANGE (VR1) [MIND] ☆ Voltage change by FADER operation: 5.3 to 5.4 V DC	1) Adjust VR1 so that voltage change in FADER operation is 5.3 to 5.4 V DC at the measuring point. (Example: When voltage changes between 0.9 V DC at the lowest and 6.4+V DC at the highest, the variation in voltage is 5.3 V which meets the specification.)
			◎ TP2 [MIND] ① FADER LEVEL OFFSET (VR2) [MIND] ☆ Peak voltage in FADER operation: 5.2 to 5.3 V DC	2) Adjust VR2 so that the peak voltage in FADER operation is 5.2 V to 5.3 V DC at the measuring point.
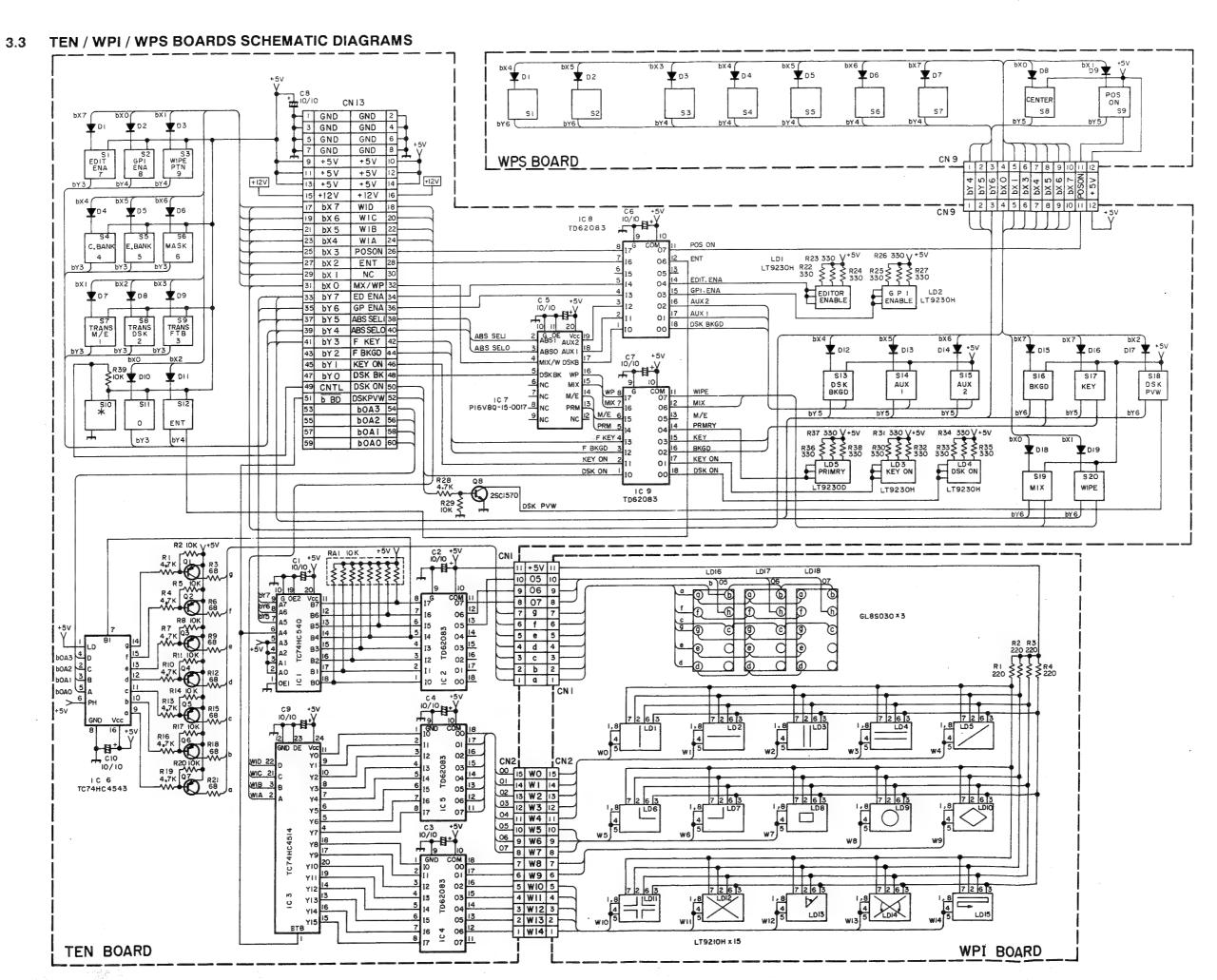
SECTION 3
CHARTS AND DIAGRAMS
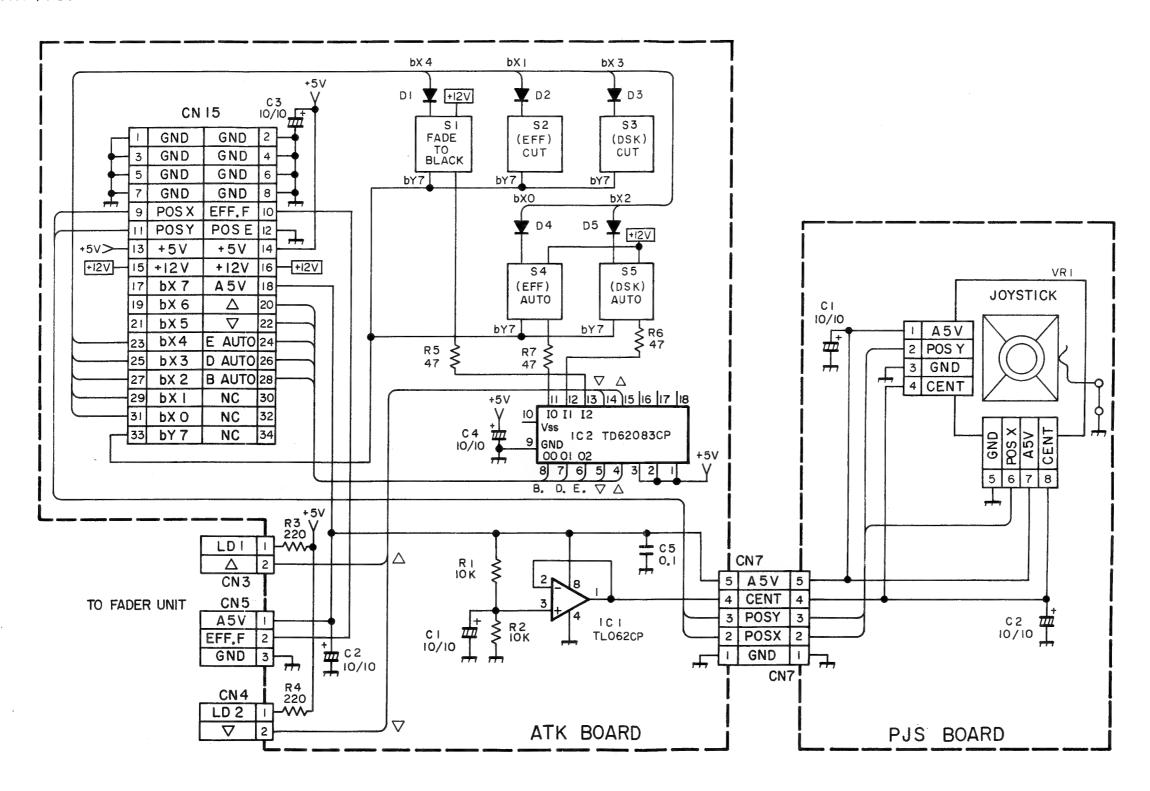
3.1 KM-5000P OVERALL WIRING

JVC-04150 / Druck 7
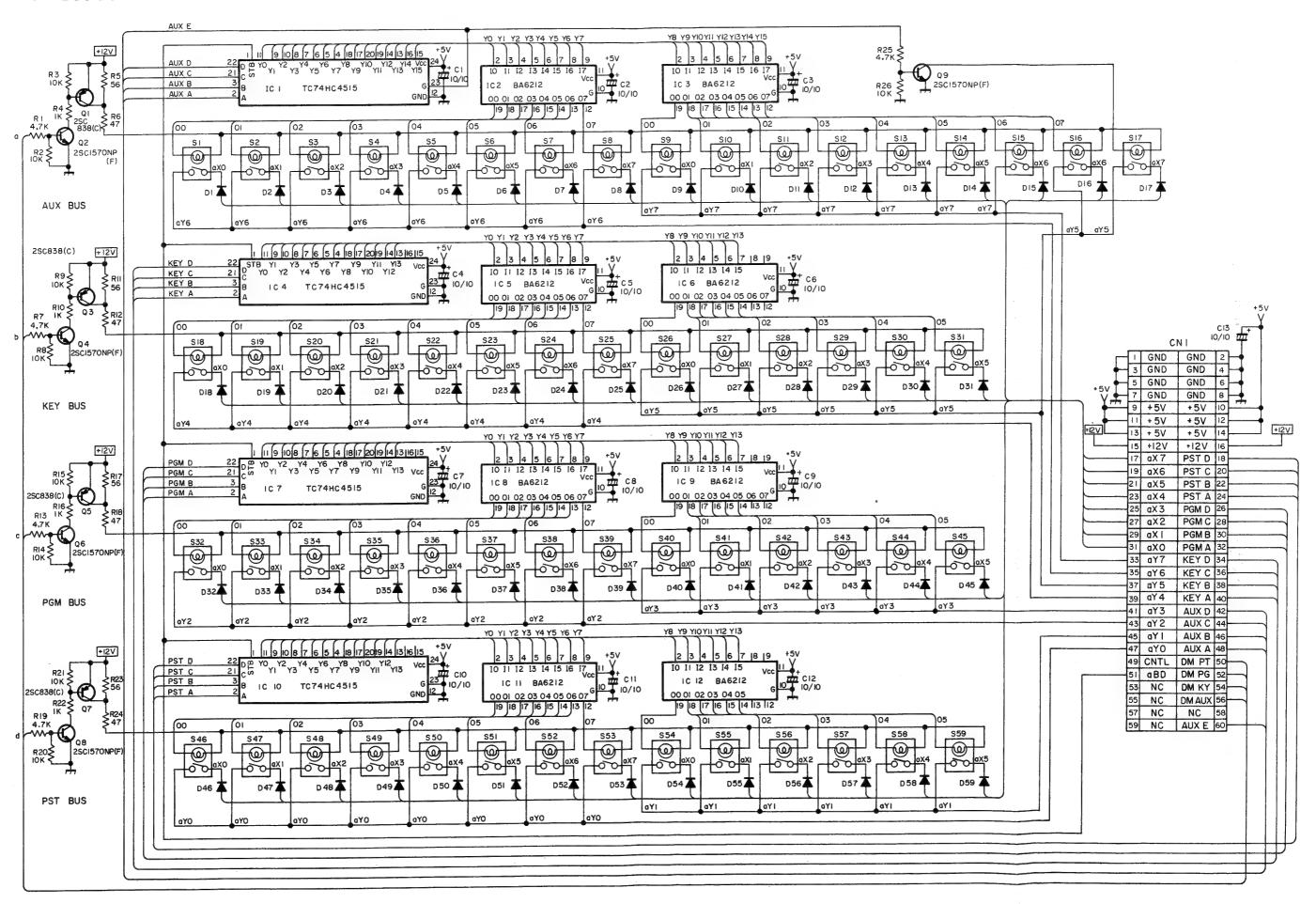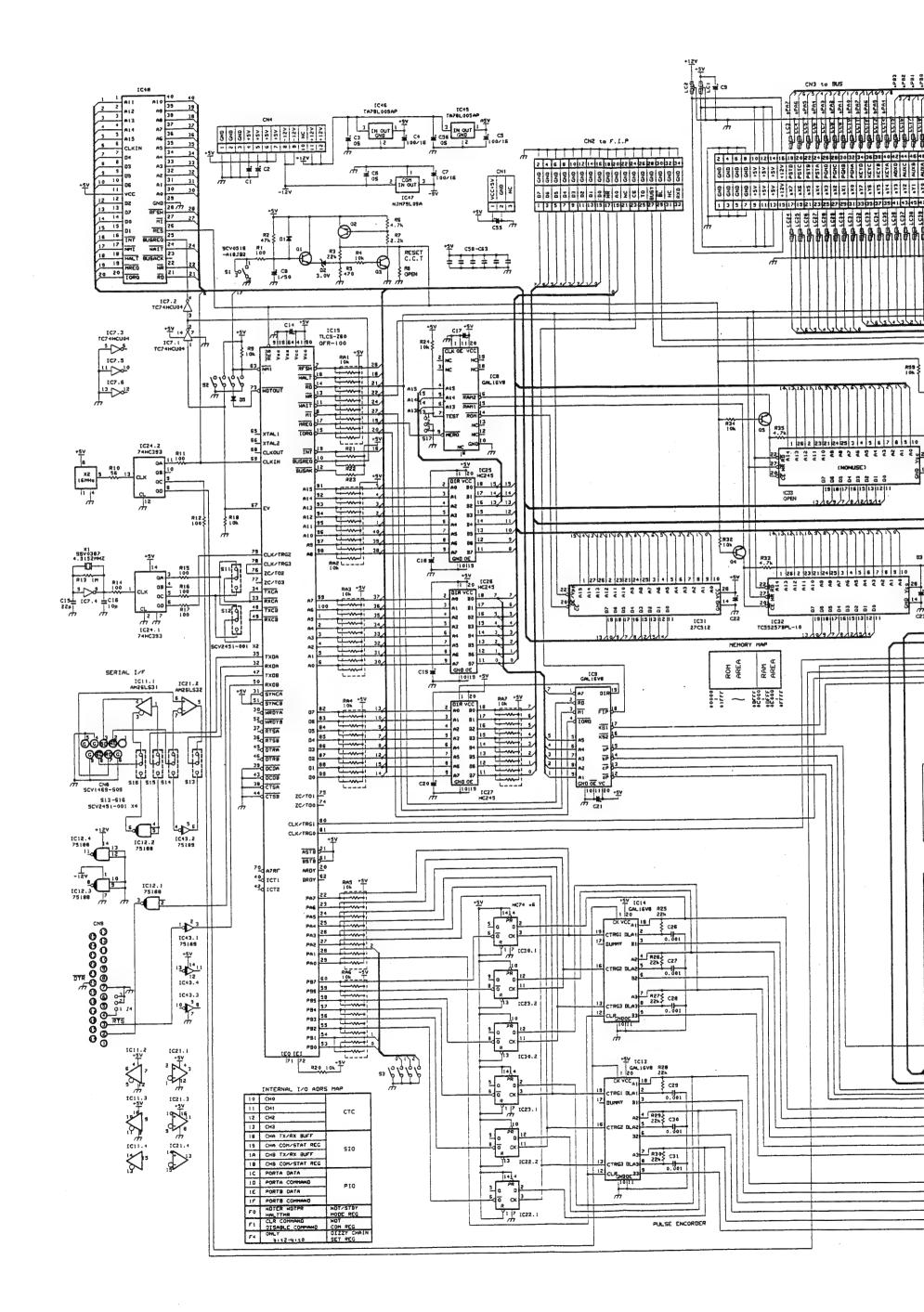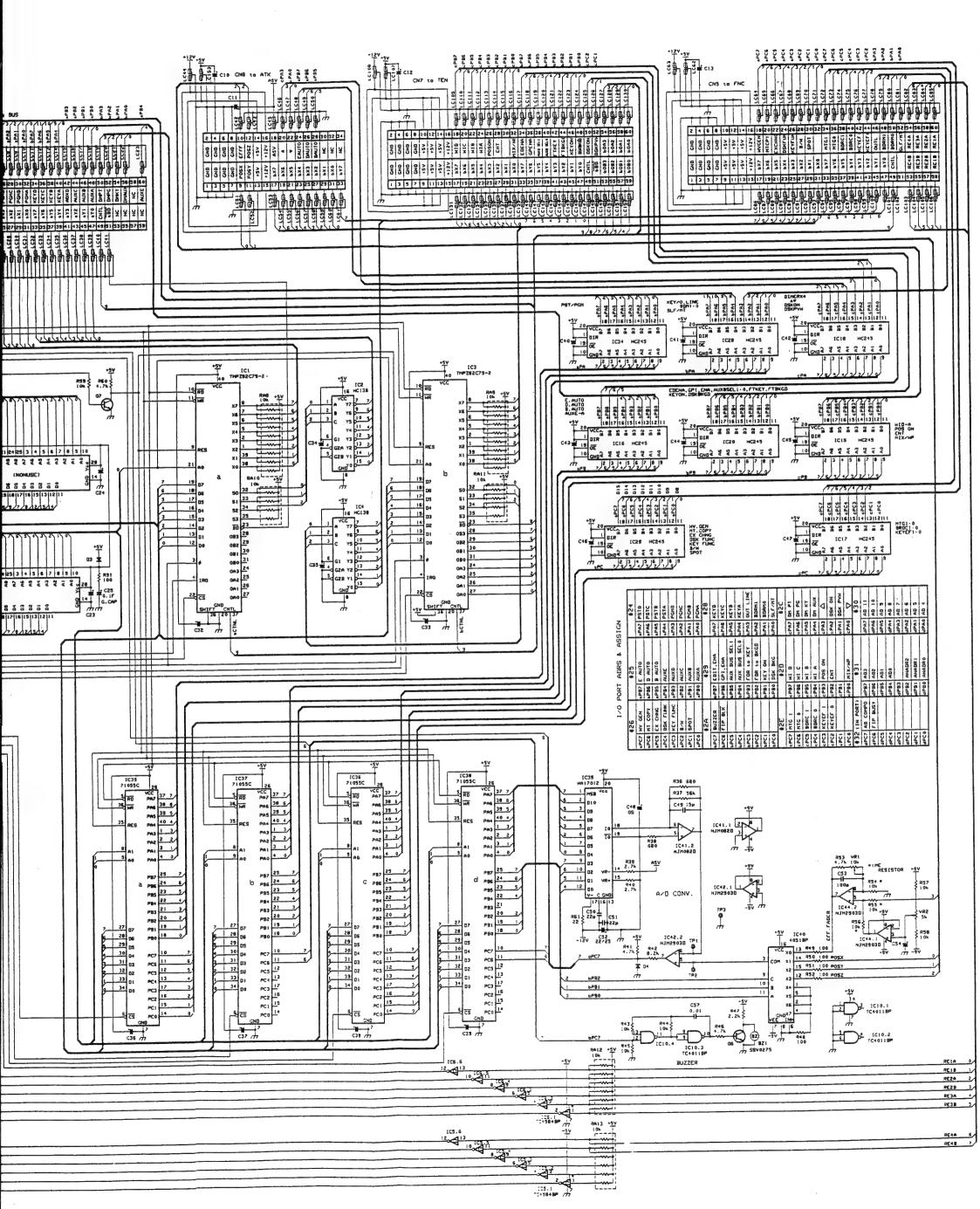
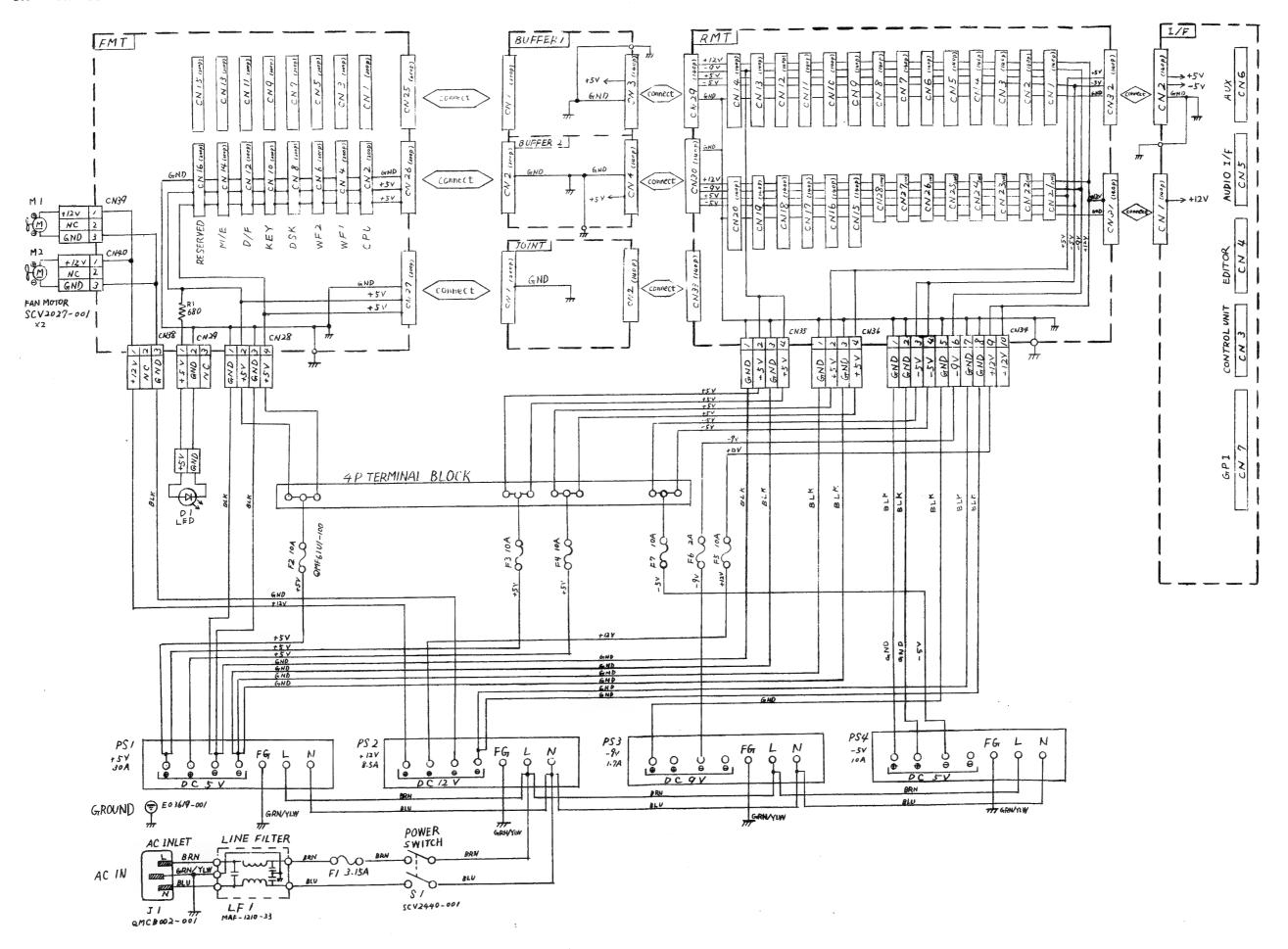## 3.3 TEN / WPI / WPS BOARDS SCHEMATIC DIAGRAMS

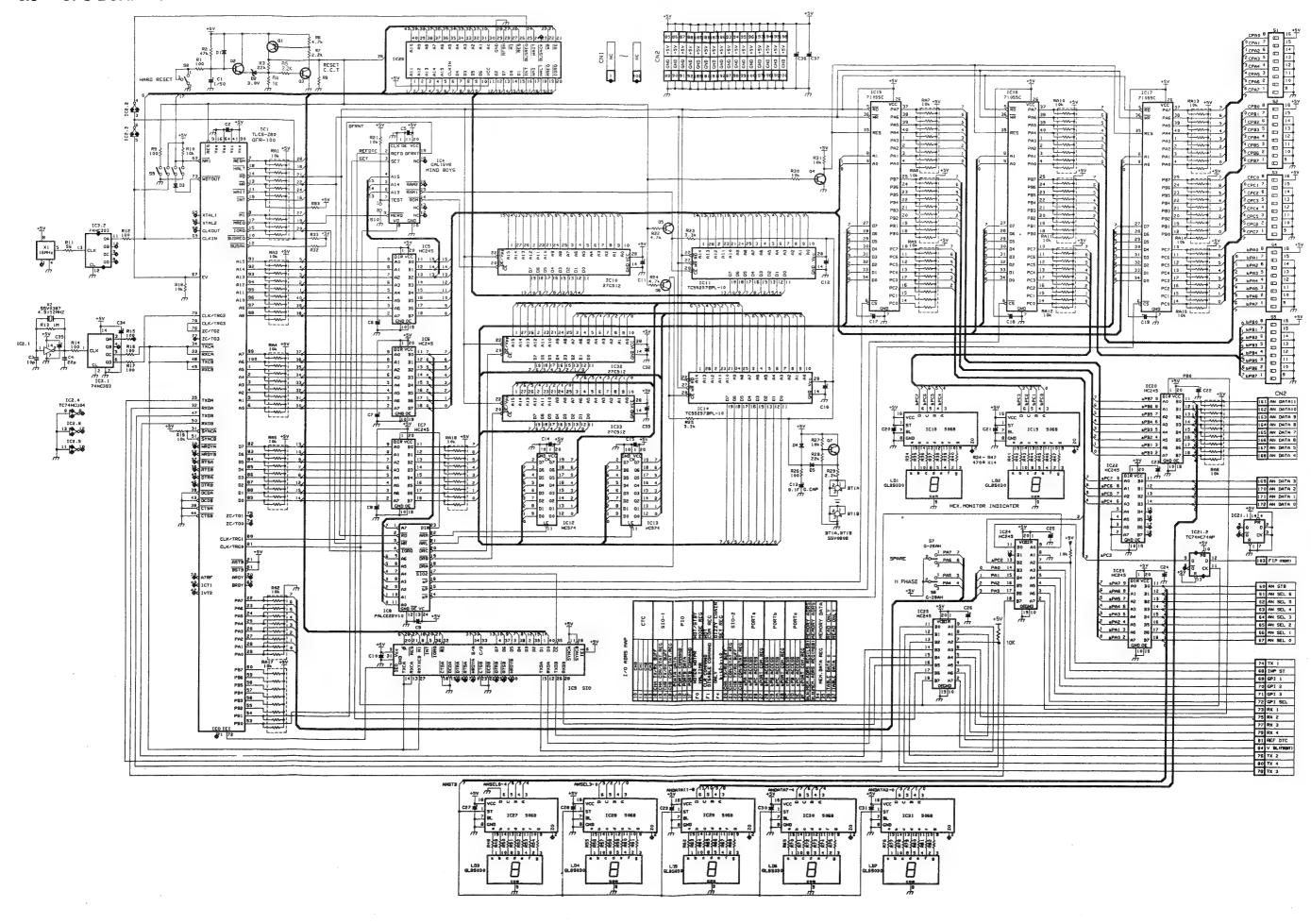## 3.4 ATK / PJS BOARDS SCHEMATIC DIAGRAMS

3.5 BUS BOARD SCHEMATIC DIAGRAM

JVC-04150 / Druck 11
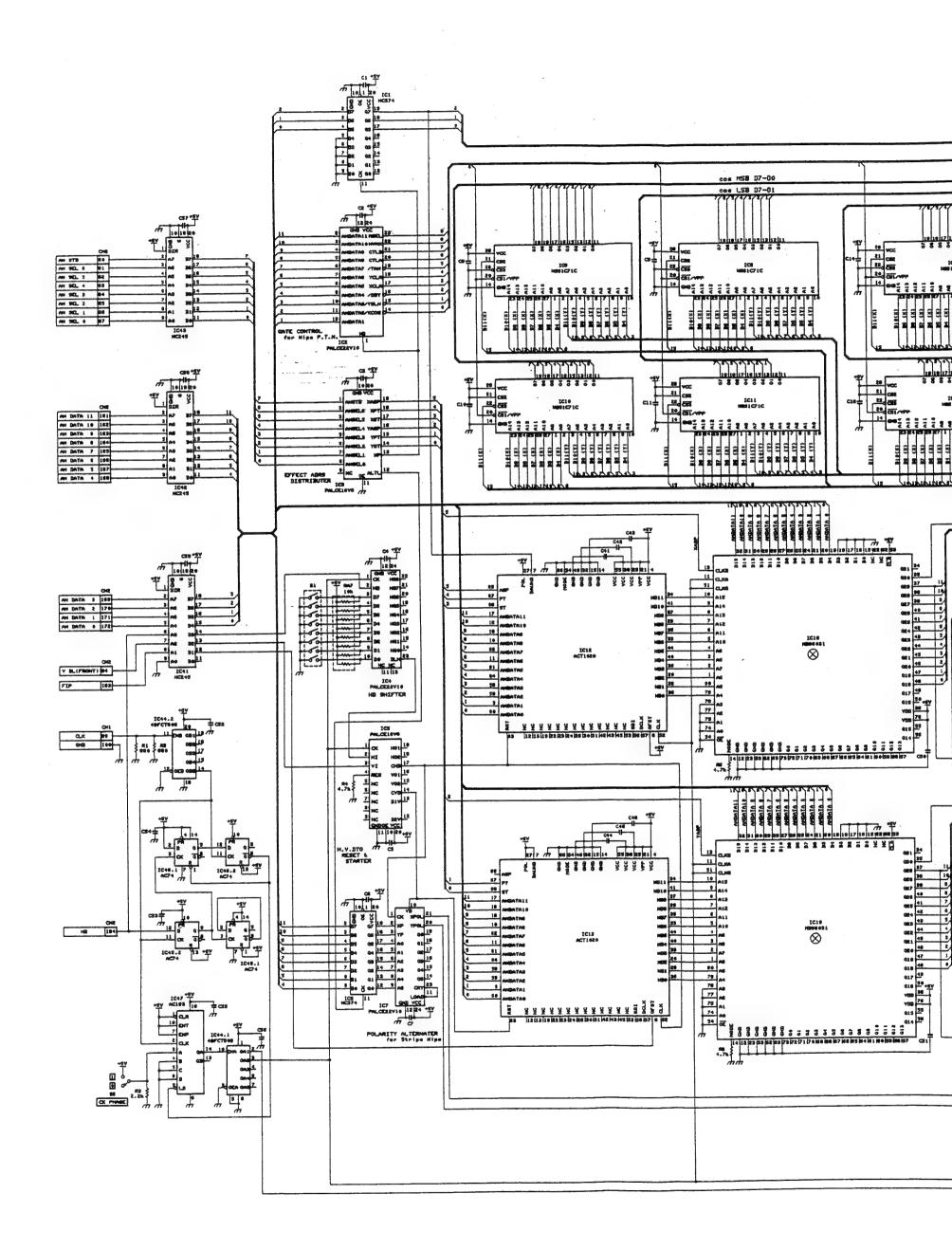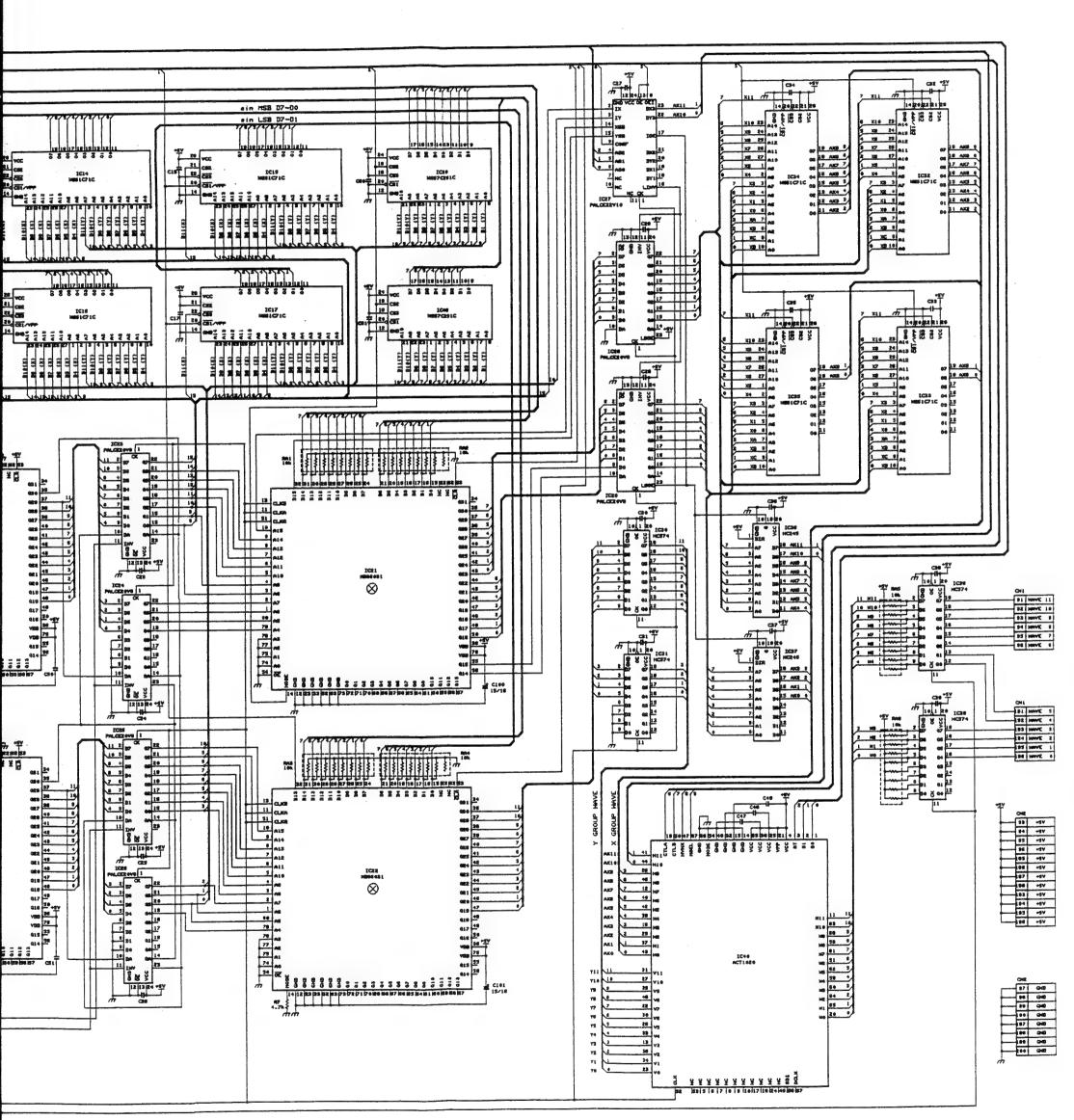
3.7 KM-5000M OVERALL WIRING

JVC-04150 / Druck 13

3.8 CPU BOARD SCHEMATIC DIAGRAM
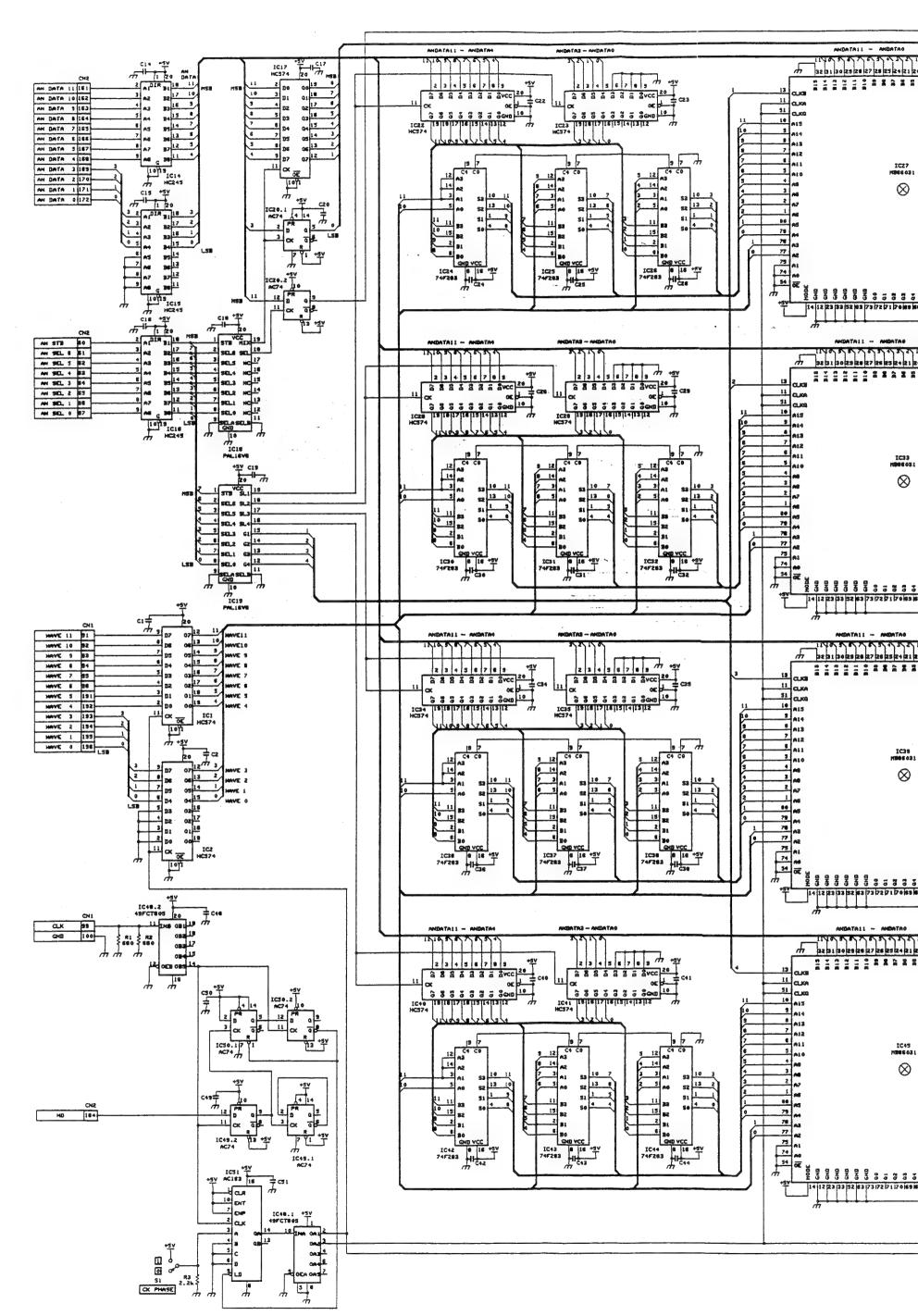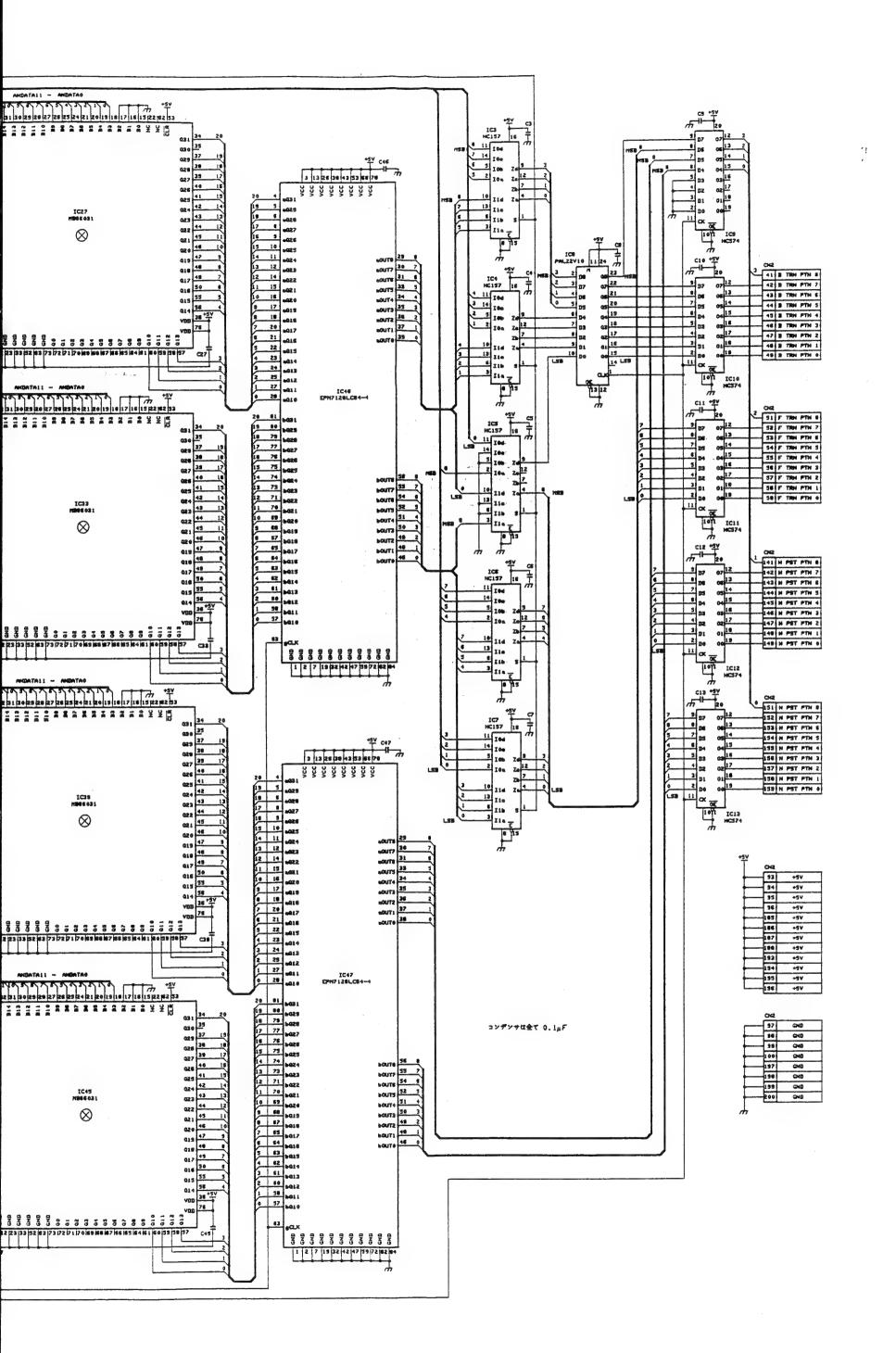
Capacitors without value are 0.1μF.

コンデンサは全て 0.1μF
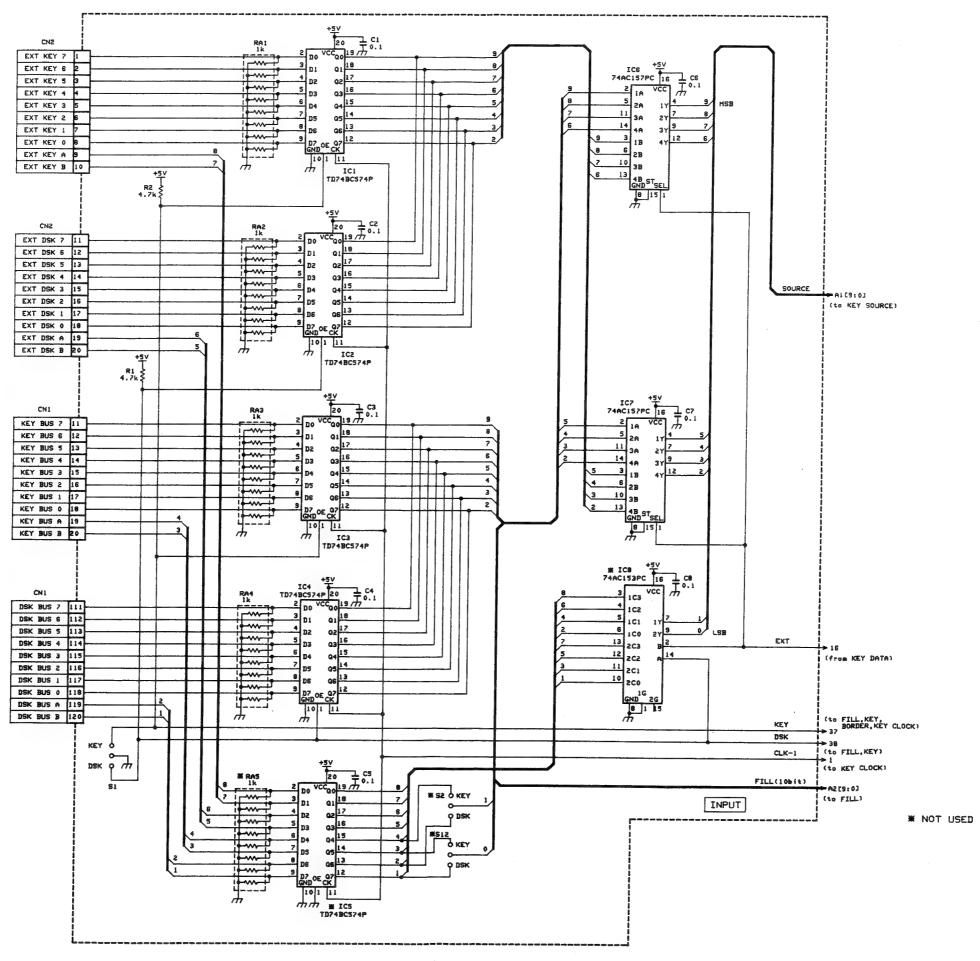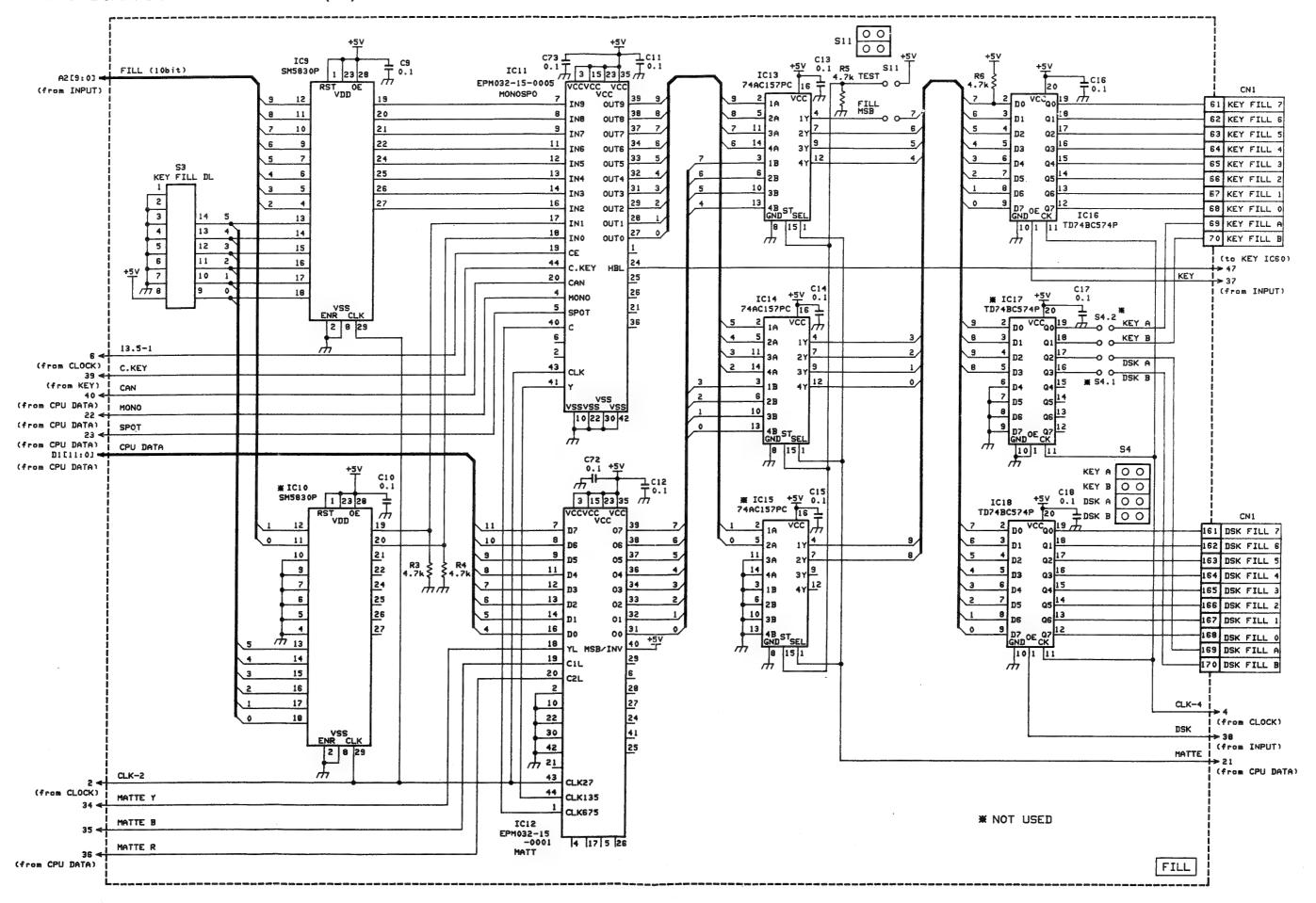
3.11 KEY/DSK BOARDS SCHEMATIC DIAGRAM (1/7)
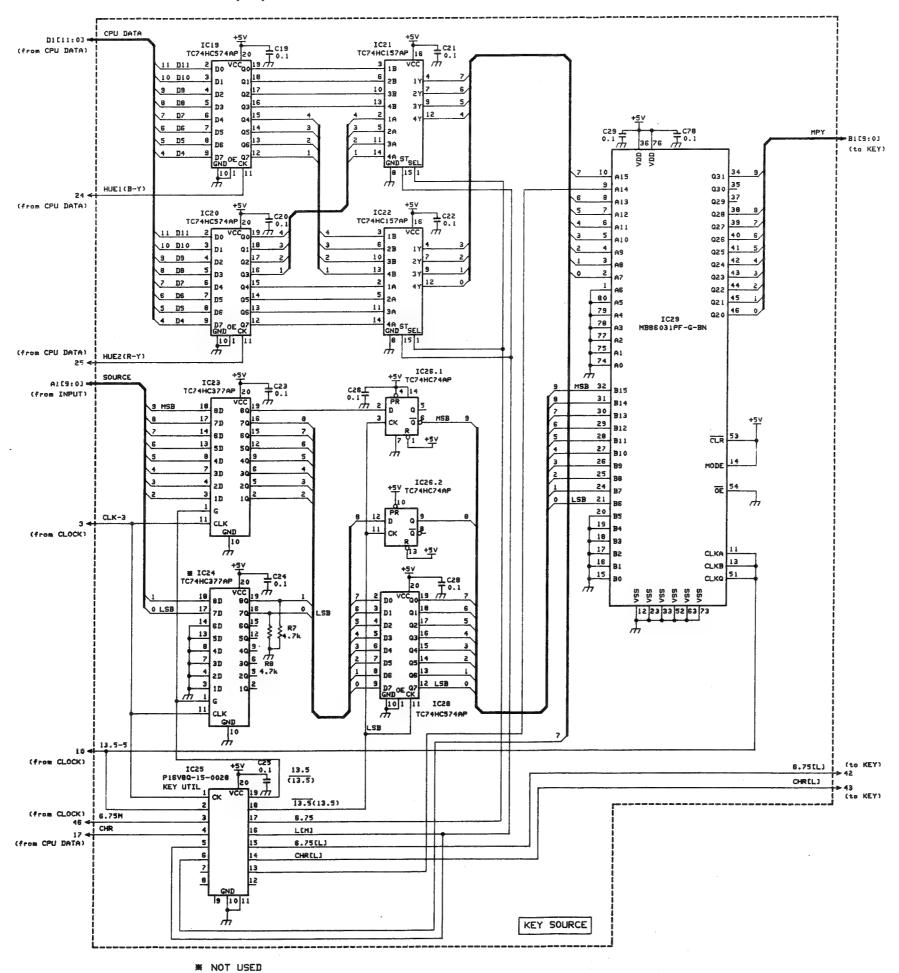
JVC-04150 / Druck 15
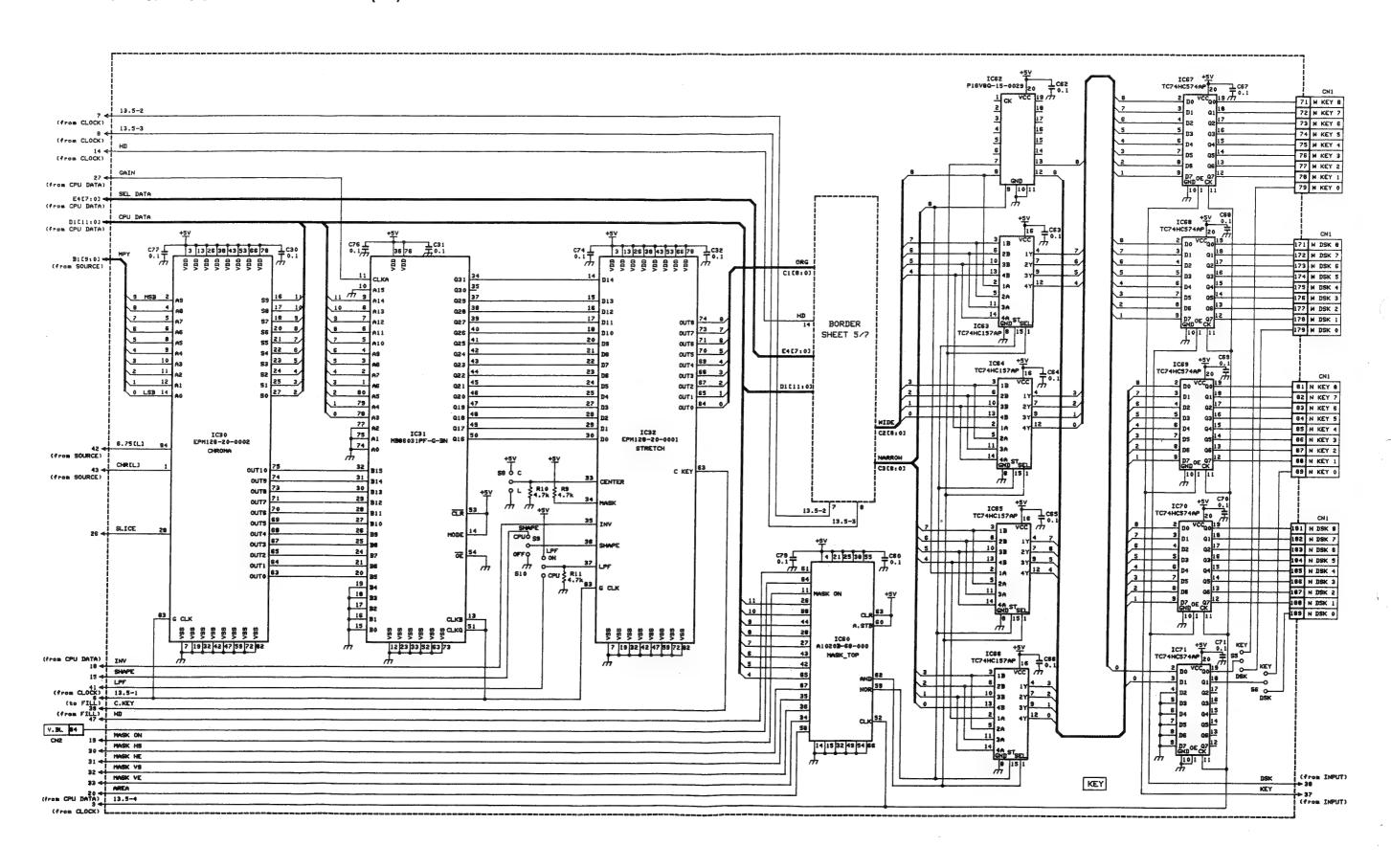
■ KEY/DSK BOARDS SCHEMATIC DIAGRAM (3/7)

KEY SOURCE

※ NOT USED

JVC-04150 / Druck 17

JVC-04150 / Druck 19

■ KEY/DSK BOARDS SCHEMATIC DIAGRAM (6/7)
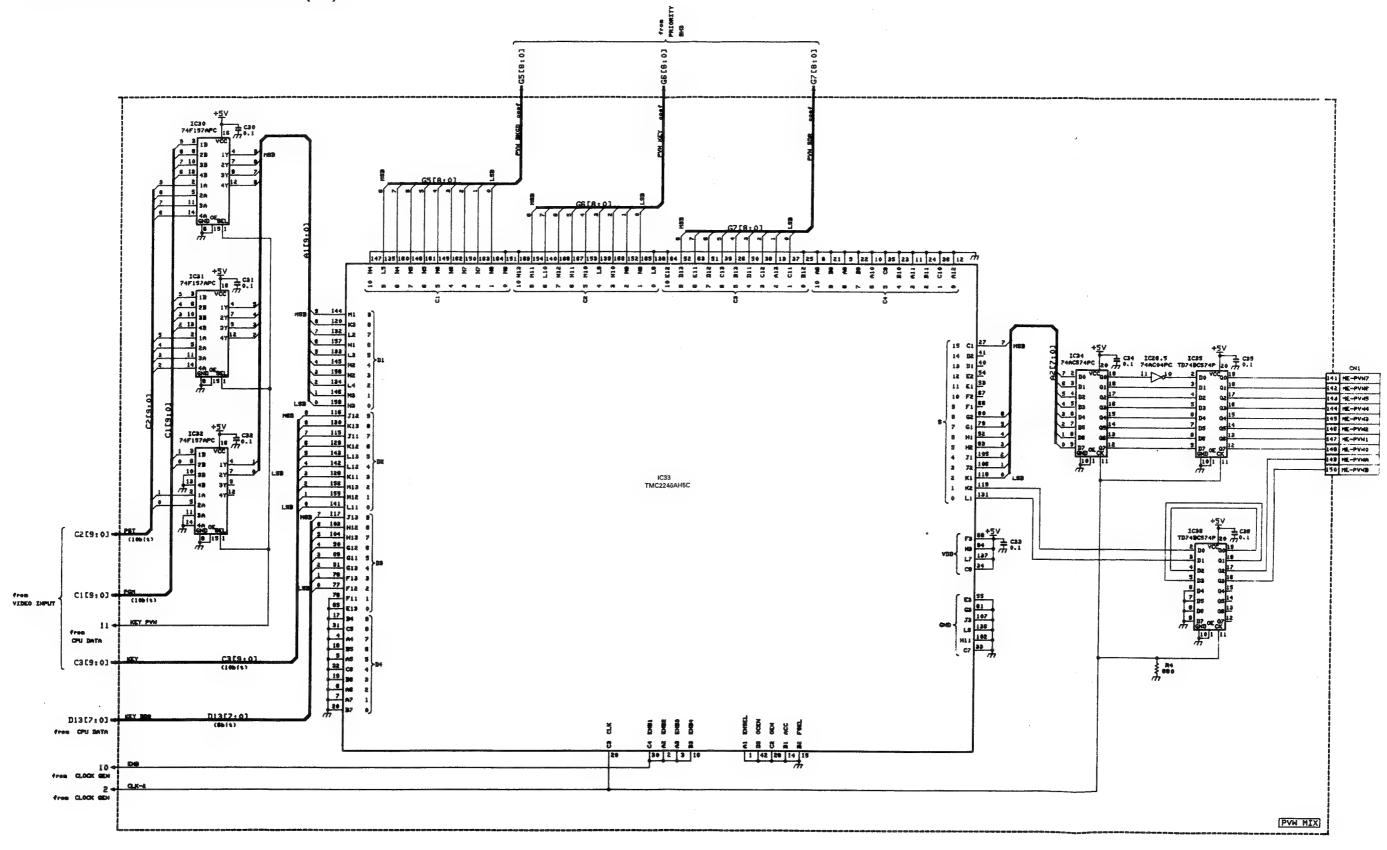
■ M/E BOARD SCHEMATIC DIAGRAM (2/9)

■ M/E BOARD SCHEMATIC DIAGRAM (8/9)
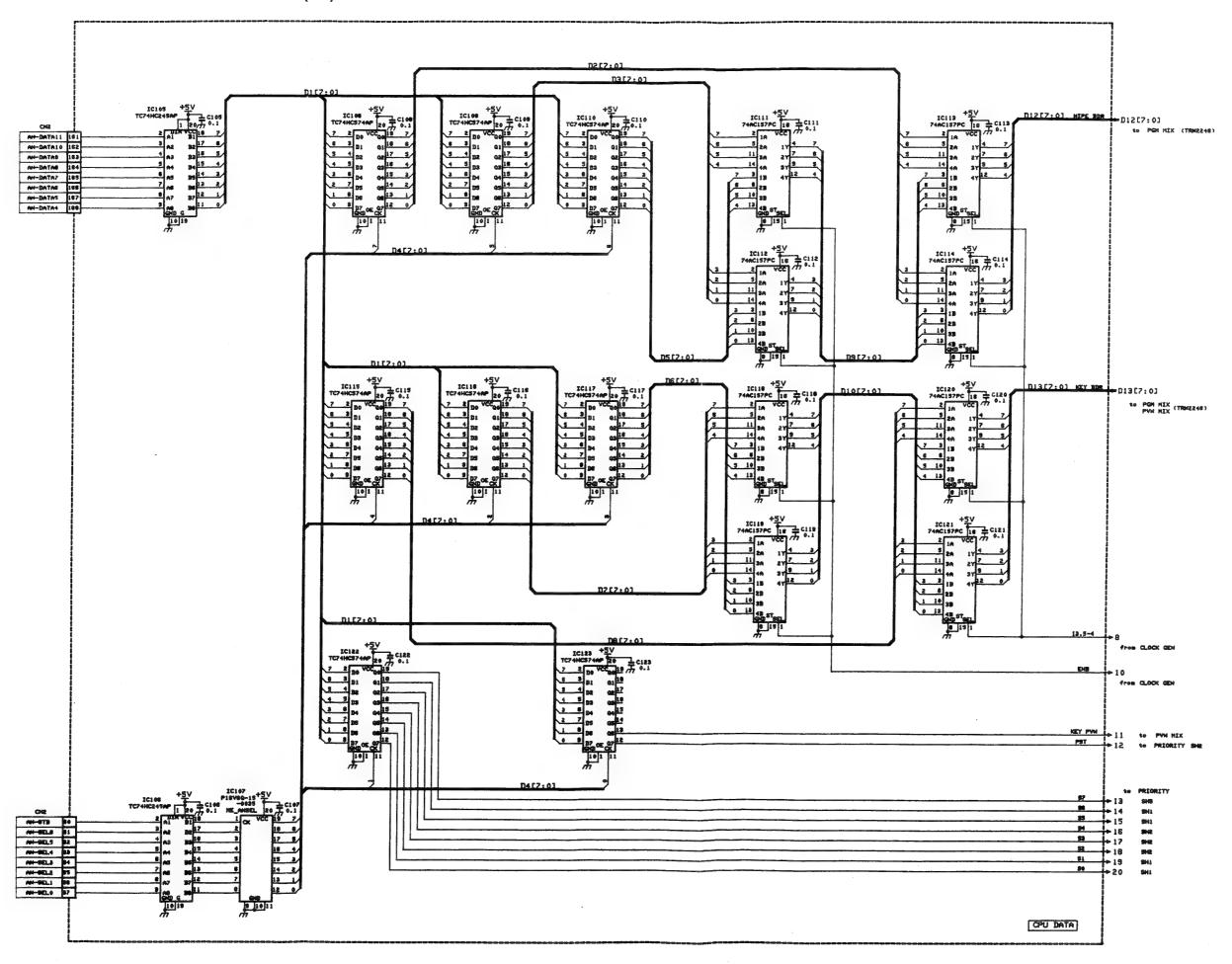
CLOCK GEN

JVC-04150 / Druck 29

JVC-04150 / Druck 31

■ DF BOARD SCHEMATIC DIAGRAM (4/8)
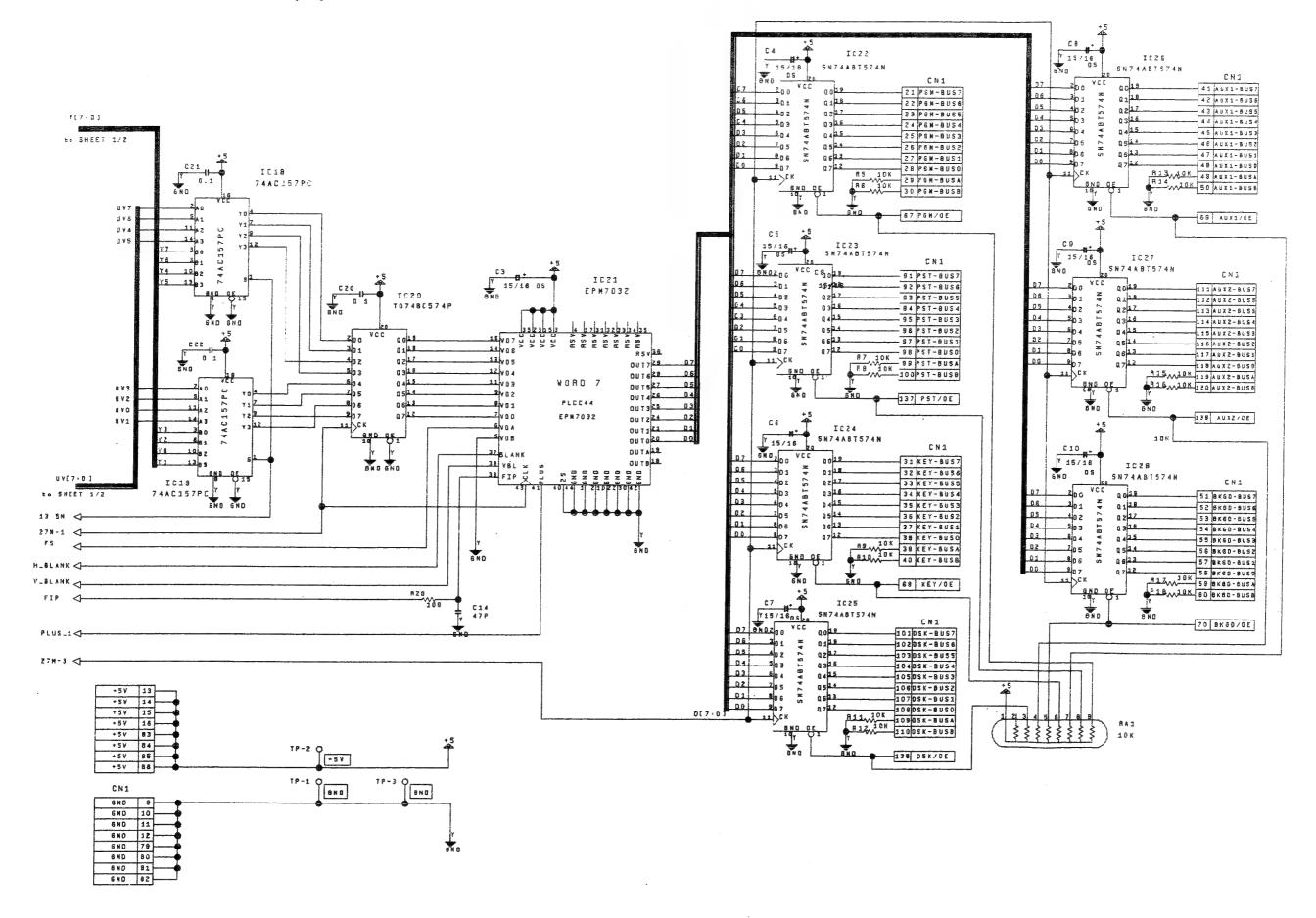
PVW CTL/KEY OUT

■ BCG BOARD SCHEMATIC DIAGRAM (2/2)

JVC-04150 / Druck 41

CN15   CN13   CN11   CN9   CN7   CN5   CN3   CN1   CN25

Signal (CN25)		Signal (right)
PGM_BUS7	1	PST_BUS7
PGM_BUS6	2	PST_BUS6
PGM_BUS5	3	PST_BUS5
PGM_BUS4	4	PST_BUS4
PGM_BUS3	5	PST_BUS3
PGM_BUS2	6	PST_BUS2
PGM_BUS1	7	PST_BUS1
PGM_BUS0	8	PST_BUS0
PGM_BUSA	9	PST_BUSA
PGM_BUSB	10	PST_BUSB
KEY_BUS7	11	DSK_BUS7
KEY_BUS6	12	DSK_BUS6
KEY_BUS5	13	DSK_BUS5
KEY_BUS4	14	DSK_BUS4
KEY_BUS3	15	DSK_BUS3
KEY_BUS2	16	DSK_BUS2
KEY_BUS1	17	DSK_BUS1
KEY_BUS0	18	DSK_BUS0
KEY_BUSA	19	DSK_BUSA
KEY_BUSB	20	DSK_BUSB
AUX1_BUS7	21	AUX2_BUS7
AUX1_BUS6	22	AUX2_BUS6
AUX1_BUS5	23	AUX2_BUS5
AUX1_BUS4	24	AUX2_BLS4
AUX1_BUS3	25	AUX2_BUS3
AUX1_BUS2	26	AUX2_BUS2
AUX1_BUS1	27	AUX2_BUS1
AUX1_BUS0	28	AUX2_BUS0
AUX1_BUSA	29	AUX2_BUSA
AUX1_BUSB	30	AUX2_BUSB
BKGD_BUS7	31	ME_PGM7
BKGD_BUS6	32	ME_PGM6
BKGD_BUS5	33	ME_PGM5
BKGD_BUS4	34	ME_PGM4
BKGD_BUS3	35	ME_PGM3
BKGD_BUS2	36	ME_PGM2
BKGD_BUS0	37	ME_PGM1
BKGD_BUS0	38	ME_PGM0
BKGD_BUSA	39	ME_PGMA
BKGD_BUSB	40	ME_PGMB
F_UTIL 141	41	ME_PVW7
F_UTIL 142	42	ME_PVW6
F_UTIL 143	43	ME_PVW5
F_UTIL 144	44	ME_PVW4
F_UTIL 145	45	ME_PVW3
F_UTIL 146	46	ME_PVW2
F_UTIL 147	47	ME_PVW1
F_UTIL 148	48	ME_PVW0
F_UTIL 149	49	ME_PVWA
F_UTIL 150	50	ME_PVWB

■ FMT BOARD SCHEMATIC DIAGRAM (4/4)

CN27 CN16 CN14 CN12 CN10 CN8 CN6 CN4 CN2 CN26

3.20 BUFFER1 BOARD SCHEMATIC DIAGRAM

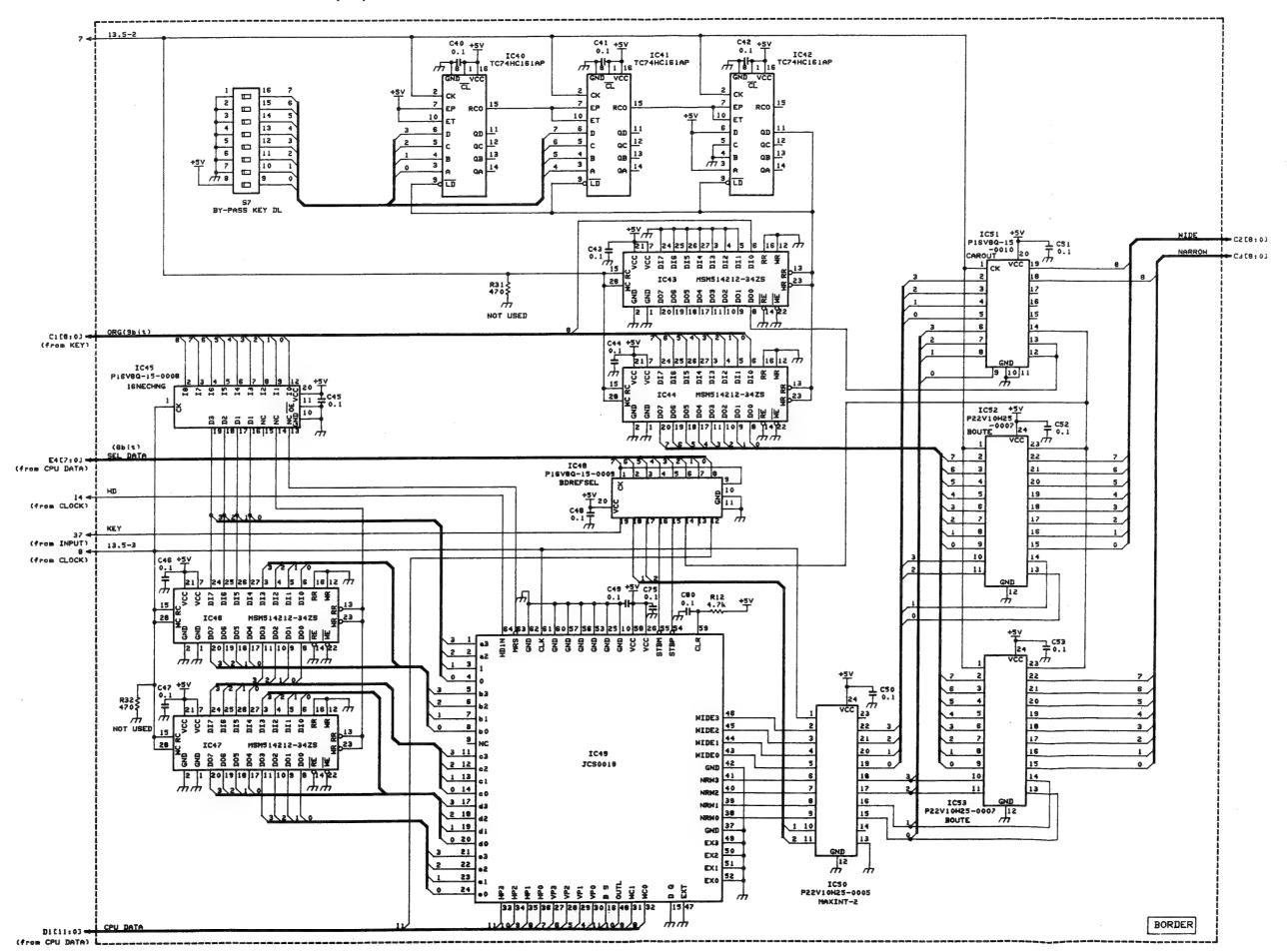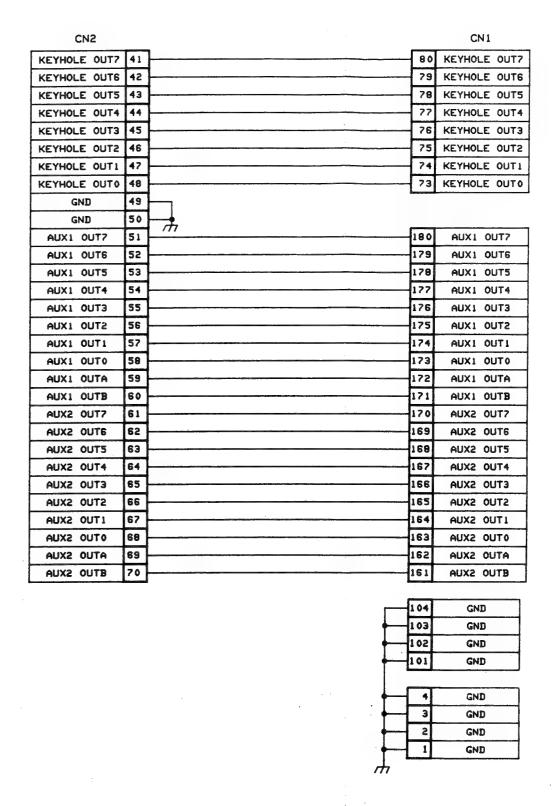## 3.21 BUFFER2 BOARD SCHEMATIC DIAGRAM

JVC-04150 / Druck 50
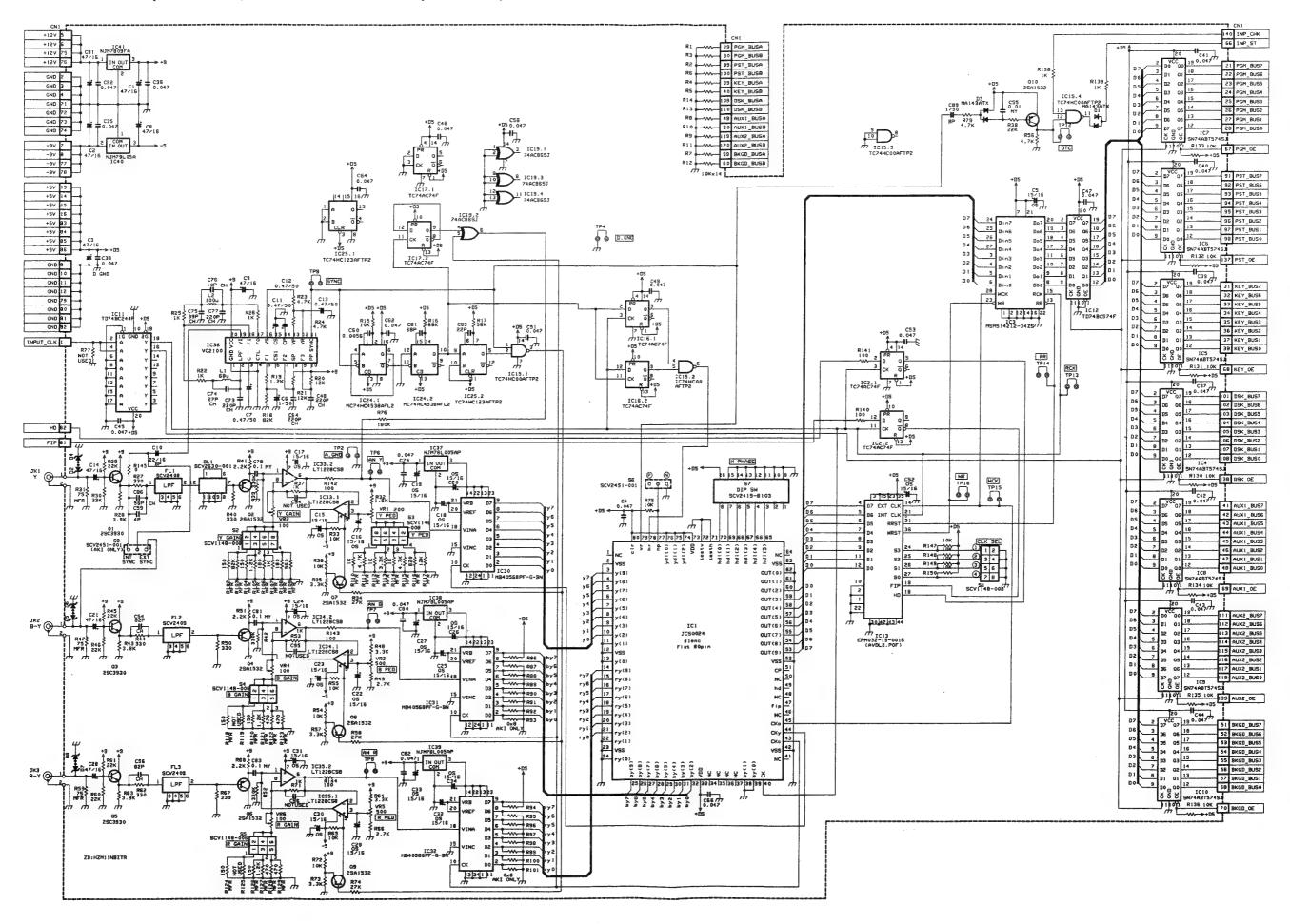
3.22 JOINT BOARD SCHEMATIC DIAGRAM

CN2 / CN1 (left)

CN2 Signal	Pin		Pin	CN1 Signal
			200	GND
FRONT CLK(1)	1		199	FRONT CLK(1)
GND	2		198	GND
FRONT CLK(2)	3		197	FRONT CLK(2)
GND	4		196	GND
FRONT CLK(3)	5		195	FRONT CLK(3)
GND	6		194	GND
FRONT CLK(4)	7		193	FRONT CLK(4)
GND	8		192	GND
FRONT CLK(5)	9		191	FRONT CLK(5)
GND	10			
PGM OUT7	11		100	PGM OUT7
PGM OUT6	12		99	PGM OUT6
PGM OUT5	13		98	PGM OUT5
PGM OUT4	14		97	PGM OUT4
PGM OUT3	15		96	PGM OUT3
PGM OUT2	16		95	PGM OUT2
PGM OUT1	17		94	PGM OUT1
PGM OUT0	18		93	PGM OUT0
PGM OUTA	19		92	PGM OUTA
PGM OUTB	20		91	PGM OUTB
PVW OUT7	21		90	PVW OUT7
PVW OUT6	22		89	PVW OUT6
PVW OUT5	23		88	PVW OUT5
PVW OUT4	24		87	PVW OUT4
PVW OUT3	25		86	PVW OUT3
PVW OUT2	26		85	PVW OUT2
PVW OUT1	27		84	PVW OUT1
PVW OUT0	28		83	PVW OUT0
PVW OUTA	29		82	PVW OUTA
PVW OUTB	30		81	PVW OUTB
FIP(FRONT)	31		19	SYNC(FRONT)
HD(FRONT)	32		18	FIP(FRONT)
V BL(FRONT)	33		17	HD(FRONT)
C BL(FRONT)	34			
SYNC(FRONT)	35			
REF DTC	36		120	REF DTC
FJ100 UTIL	37		119	FJ100 UTIL
			118	C BL(FRONT)
			117	V BL(FRONT)

CN2 / CN1 (right)

CN2 Signal	Pin		Pin	CN1 Signal
KEYHOLE OUT7	41		80	KEYHOLE OUT7
KEYHOLE OUT6	42		79	KEYHOLE OUT6
KEYHOLE OUT5	43		78	KEYHOLE OUT5
KEYHOLE OUT4	44		77	KEYHOLE OUT4
KEYHOLE OUT3	45		76	KEYHOLE OUT3
KEYHOLE OUT2	46		75	KEYHOLE OUT2
KEYHOLE OUT1	47		74	KEYHOLE OUT1
KEYHOLE OUT0	48		73	KEYHOLE OUT0
GND	49			
GND	50			
AUX1 OUT7	51		180	AUX1 OUT7
AUX1 OUT6	52		179	AUX1 OUT6
AUX1 OUT5	53		178	AUX1 OUT5
AUX1 OUT4	54		177	AUX1 OUT4
AUX1 OUT3	55		176	AUX1 OUT3
AUX1 OUT2	56		175	AUX1 OUT2
AUX1 OUT1	57		174	AUX1 OUT1
AUX1 OUT0	58		173	AUX1 OUT0
AUX1 OUTA	59		172	AUX1 OUTA
AUX1 OUTB	60		171	AUX1 OUTB
AUX2 OUT7	61		170	AUX2 OUT7
AUX2 OUT6	62		169	AUX2 OUT6
AUX2 OUT5	63		168	AUX2 OUT5
AUX2 OUT4	64		167	AUX2 OUT4
AUX2 OUT3	65		166	AUX2 OUT3
AUX2 OUT2	66		165	AUX2 OUT2
AUX2 OUT1	67		164	AUX2 OUT1
AUX2 OUT0	68		163	AUX2 OUT0
AUX2 OUTA	69		162	AUX2 OUTA
AUX2 OUTB	70		161	AUX2 OUTB

Pin	Signal
104	GND
103	GND
102	GND
101	GND
4	GND
3	GND
2	GND
1	GND

3.29 DSO BOARD (KM-BK5013) SCHEMATIC DIAGRAM (OPTIONAL)
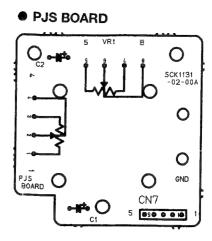
3.30 DPO BOARD (KM-BK5014) SCHEMATIC DIAGRAM (OPTIONAL)
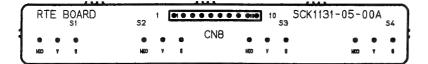
3.31 FNC / RTE / ATK / PJS / WPS CIRCUIT BOARDS

● FNC BOARD

● PJS BOARD

FNC BOARD
SCK1131-04-00A

SCK1131-02-00A

PJS BOARD

● RTE BOARD

RTE BOARD   SCK1131-05-00A

● ATK BOARD

ATK BOARD
SCK1131-01-00A

● WPS BOARD

WPS BOARD   SCK1131-03-00A

3.32 TEN / WPI CIRCUIT BOARDS
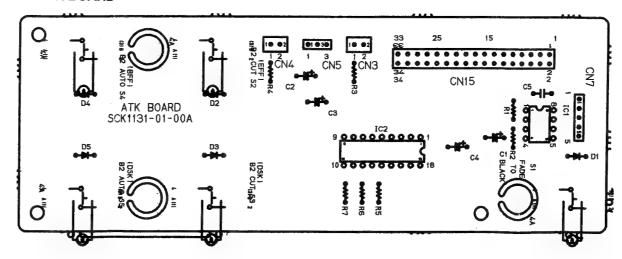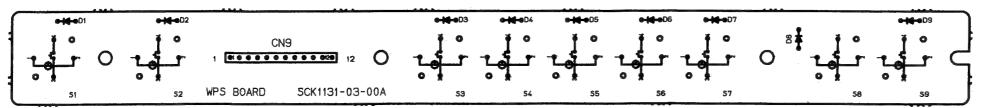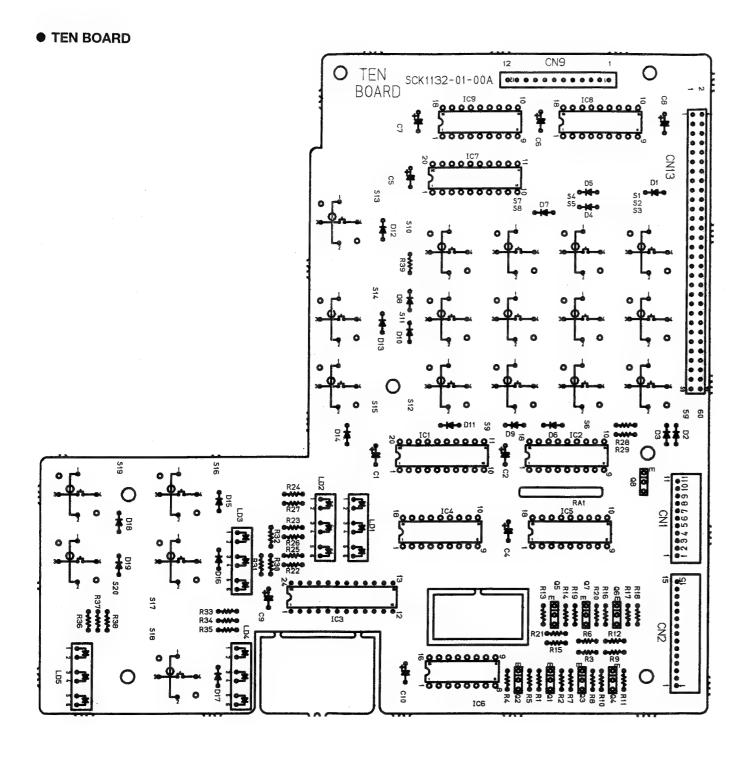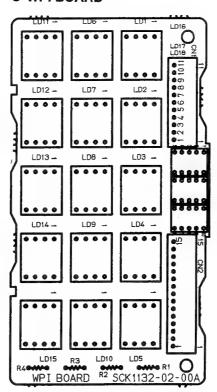
● **TEN BOARD**
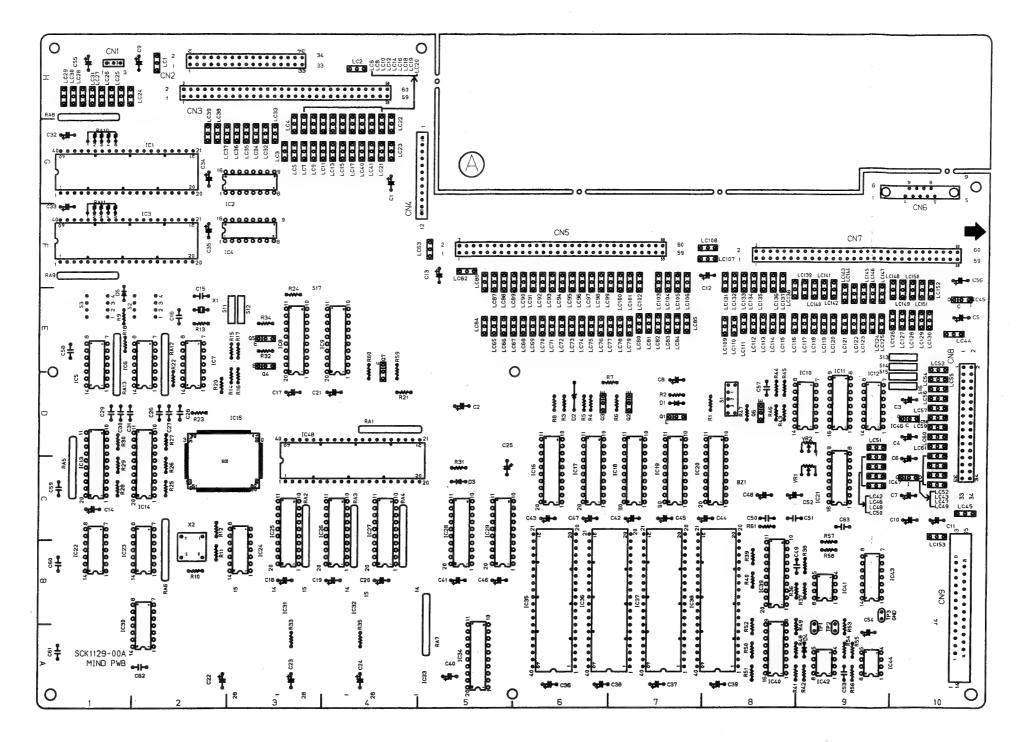
● **WPI BOARD**

3.33 MIND CIRCUIT BOARD

SCK1129-00A
MIND PWB

● **Parts Location Table of MIND board**
  ● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc
IC1	1G	IC21	9C	IC41	9B	D4	9A	R18	1E	R39	8B	R59	4D	C14	1C	C34	2G	C54	9A	LC6	3H	LC26	1H	LC46	9C
IC2	2G	IC22	1B	IC42	9A	D5	1E	R20	2D	R40	8B	R60	4D	C15	2E	C35	2F	C55	1H	LC7	3G	LC27	1H	LC47	10C
IC3	1F	IC23	2B	IC43	10B			R21	4D	R41	9A	R61	4C	C16	2E	C36	6A	C56	10F	LC8	3H	LC28	1H	LC48	9C
IC4	2F	IC24	3B	IC44	10A	R1	8D	R22	2D	R42	9A			C17	3D	C37	7A	C57	8D	LC9	3G	LC29	1H	LC49	10C
IC5	1D	IC25	3B	IC45	10E	R2	7D	R23	2D	R43	9D	VR1	9C	C18	3B	C38	7A	C58	1E	LC10	4H	LC30	1H	LC50	9C
IC6	2D	IC26	4B	IC46	10D	R3	6D	R24	3E	R44	8D	VR2	9D	C19	4B	C39	8A	C59	1C	LC11	4H	LC31	1H	LC51	9D
IC7	2D	IC27	4B	IC47	10C	R4	6D	R25	2C	R45	9D			C20	4B	C40	5A	C60	1B	LC12	4H	LC32	3G	LC52	10D
IC8	3D	IC28	5B	IC48	3C	R5	6D	R26	2C	R46	8D	C1	4G	C21	2A	C41	5B	C61	1A	LC13	4H	LC33	3G	LC53	10E
IC9	4D	IC29	6B			R6	7D	R27	2D	R47	9A	C2	5D	C22	2A	C42	7C	C62	2A	LC14	4H	LC34	3G	LC54	10D
IC10	9D	IC30	2A	Q1	7D	R7	7D	R28	1C	R48	9A	C3	3A	C23	3A	C43	6C	C63	8C	LC15	4H	LC35	3G	LC55	10D
IC11	9D	IC31	3A	Q2	7D	R8	7D	R29	1C	R49	9A	C4	10B	C24	4A	C44	8C			LC16	4H	LC36	3G	LC56	10D
IC12	10D	IC32	4A	Q3	7D	R9	1E	R30	1D	R50	8A	C5	10E	C25	6C	C45	7C	TP1	9A	LC17	4G	LC37	3G	LC57	10D
IC13	1C	IC33	5A	Q4	3E	R10	2B	R31	5C	R51	8A	C6	10C	C26	2D	C46	5B	TP2	9A	LC18	4H	LC38	2G	LC58	10D
IC14	2C	IC34	5A	Q5	3E	R11	2B	R32	3E	R52	8A	C7	10C	C27	2D	C47	6C	TP3	10B	LC19	4H	LC39	2G	LC59	10D
IC15	2C	IC35	6A	Q6	8D	R12	2C	R33	3A	R53	9A	C8	7D	C28	2D	C48	7C			LC20	4H	LC40	4H	LC60	10D
IC16	6C	IC36	7A	Q7	4E	R13	2E	R34	3E	R54	9A	C9	2H	C29	1D	C49	9B	LC1	2H	LC21	4G	LC41	4G	LC61	10D
IC17	7C	IC37	7A			R14	3D	R35	4A	R55	9A	C10	10C	C30	1D	C50	8C	LC2	4H	LC22	4G	LC42	9C	LC62	8F
IC18	7C	IC38	8A	D1	7D	R15	3E	R36	9B	R56	9B	C11	10C	C31	1D	C51	9C	LC3	3G	LC23	4G	LC43	3G	LC63	7E
IC19	7C	IC39	9B	D2	6D	R16	3D	R37	9B	R57	9B	C12	8F	C32	1G	C52	9C	LC4	3H	LC24	1H	LC44	10E	LC64	7E
IC20	8C	IC40	9A	D3	5C	R17	3E	R38	9B	R58	9B	C13	5F	C33	1F	C53	9A	LC5	3G	LC25	1H	LC45	10C	LC65	5E

Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc
LC66	6E	LC86	5F	LC106	7F	LC126	10E	LC146	10E	RA1	4D
LC67	6E	LC87	5F	LC107	8F	LC127	10E	LC147	10E	RA2	3C
LC68	6E	LC88	5F	LC108	8F	LC128	10E	LC148	10F	RA3	4C
LC69	6E	LC89	6F	LC109	8E	LC129	10E	LC149	10F	RA4	4C
LC70	6E	LC90	6F	LC110	8E	LC130	10E	LC150	10F	RA5	1C
LC71	6E	LC91	6F	LC111	8E	LC131	8F	LC151	10F	RA6	2B
LC72	6E	LC92	6F	LC112	8E	LC132	8F	LC152	10F	RA7	5A
LC73	6E	LC93	6F	LC113	8E	LC133	8F			RA8	1H
LC74	6E	LC94	6F	LC114	8E	LC134	8F			RA9	1F
LC75	6E	LC95	6F	LC115	9E	LC135	8F	J4	10A	RA10	1G
LC76	7E	LC96	6F	LC116	9E	LC136	9F			RA11	1F
LC77	7E	LC97	6F	LC117	9E	LC137	9F	CN1	1H	RA12	2E
LC78	7E	LC98	7F	LC118	9E	LC138	9F	CN2	2H	RA13	1E
LC79	7E	LC99	7F	LC119	9E	LC139	9F	CN3	2H		
LC80	7E	LC100	7E	LC120	9E	LC140	9F	CN4	5G	S1	8D
LC81	7E	LC101	7F	LC121	9E	LC141	9F	CN5	5F	S2	2E
LC82	7E	LC102	7F	LC122	9E	LC142	9E	CN6	8F	S3	1E
LC83	7E	LC103	7F	LC123	9E	LC143	9F	CN7	11E	S11	3E
LC84	7E	LC104	7F	LC124	9E	LC144	9E	CN8	11E	S12	1E
LC85	7E	LC105	7F	LC125	10E	LC145	9E	CN9	11B	S13	10E

Sym	Loc
S14	10E
S15	10D
S16	10D
S17	3E
BZ1	8D
X1	2E
X2	2C

SCK1123-00A
CPU BOARD ASS'Y

● Parts Location Table of CPU board

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	7F	IC23	9H	D3	7I	R19	7F	R42	6A	R64	5H	C2	7F	C24	8I	LD2	6A	RA10	4A
IC2	6G	IC24	9H	D4	10B	R21	8D	R43	6A	R65	6H	C3	6H	C25	9I	LD3	4G	RA11	5A
IC3	6F	IC25	10H	D5	10B	R22	6D	R44	6A	R66	4H	C4	7G	C26	9I	LD4	4G	RA12	4C
IC4	8D	IC26	8F			R23	6D	R45	6A	R67	4H	C5	8D	C27	4H	LD5	5G	RA13	2A
IC5	8D	IC27	4H	R1	10G	R24	7D	R46	6A	R68	4H	C6	8D	C28	4H	LD6	5G	RA14	3A
IC6	9D	IC28	5H	R2	10G	R25	8D	R47	6A	R69	5H	C7	9D	C29	5H	LD7	5G	RA15	3A
IC7	9D	IC29	5H	R3	10F	R26	10A	R48	4H	R70	5H	C8	9D	C30	5H			RA17	7F
IC8	7D	IC30	5H	R4	10F	R27	10C	R49	4H	R71	5H	C9	7D	C31	6H	BT1A	10D	RA18	10D
IC9	8G	IC31	6H	R5	10F	R28	10C	R50	4H	R72	5H	C10	10G	C32	9B	BT1B	10F		
IC10	7B	IC32	9B	R6	10F	R29	10C	R51	4H	R73	5H	C11	7B	C33	8B			S6	9A
IC11	7B	IC33	9B	R7	10F	R30	5D	R52	3H	R74	5H	C12	6B	C34	6F	CN1	1J	S7	8A
IC12	10D			R8	9G	R31	5D	R53	3H	R75	5H	C13	10B	C35	6G	CN2	6J	S8	10A
IC13	10B	Q1	10F	R9	7I	R32	7G	R54	3H	R76	6H	C14	9D	C36	10J			S9	7H
IC14	8B	Q2	10G	R10	7H	R33	6G	R55	4H	R77	6H	C15	9B	C37	10H	RA1	9G	S10	8E
IC15	5B	Q3	10F	R11	6F	R34	5A	R56	4H	R78	5H	C16	7B			RA2	7H		
IC16	4B	Q4	5D	R12	7F	R35	5A	R57	4H	R79	5H	C17	4B	S3	4A	RA3	8D	X1	6F
IC17	3B	Q5	6D	R13	6G	R36	5A	R58	4H	R80	5H	C18	4B	S1	2A	RA4	9D	X2	7G
IC18	5C	Q6	7D	R14	6F	R37	6A	R59	5H	R81	5H	C19	5B	S2	3A	RA5	9D		
IC19	6C	Q7	10C	R15	6G	R38	5A	R60	4H	R82	5H	C20	5B	S4	4A	RA6	8I		
IC20	8H			R16	6G	R39	5A	R61	4H	R83	10F	C21	6B	S5	5A	RA7	5B		
IC21	10H	D1	10G	R17	6G	R40	5A	R62	5H			C22	8H			RA8	5D		
IC22	8H	D2	10F	R18	7H	R41	6A	R63	5H	C1	10G	C23	8H	LD1	6A	RA9	5C		

3-60   3-60

SCK1124-00A
WF1 BOARD

CK PHASE
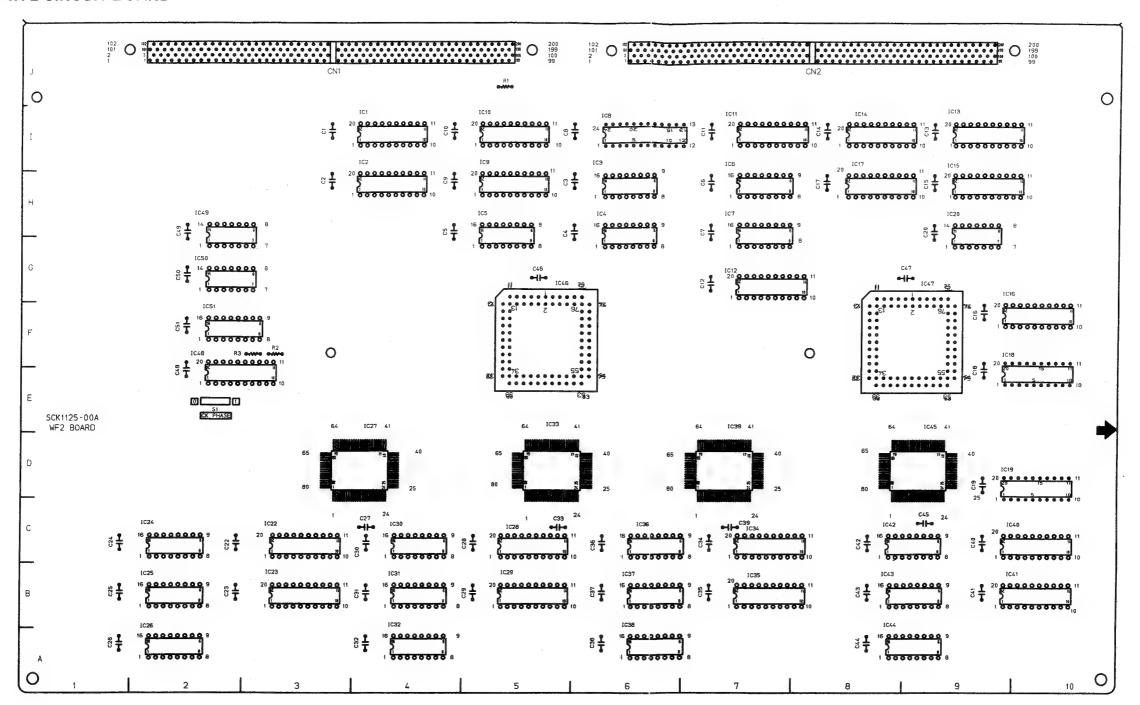
● **Parts Location Table of WF1 board**
  ● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	8H	IC21	8B	IC41	8I	C2	8I	C29	4C	C52	3F	CN1	1J
IC2	8H	IC22	6B	IC42	7I	C3	5I	C30	4E	C53	3H	CN2	6J
IC3	5H	IC23	9B	IC43	5I	C4	9H	C31	5E	C54	3H		
IC4	9H	IC24	9A	IC44	3F	C5	9I	C32	2B	C55	3G	S2	3F
IC5	9I	IC25	7B	IC45	3H	C6	6I	C33	4B	C56	3F	S1	9H
IC6	7H	IC26	7A	IC46	3G	C7	6H	C34	2A	C57	8I		
IC7	7H	IC27	1C	IC47	3G	C8	8D	C35	4A	C58	6I		
IC8	8D	IC28	1A	IC48	9E	C9	9D	C36	2C	C59	5I		
IC9	9D	IC29	4C			C10	8C	C37	4D	C60	8E		
IC10	8C	IC30	4E	R1	5J	C11	9C	C38	4I	C61	9E		
IC11	9C	IC31	5E	R2	3H	C14	5D	C39	3I	C100	8B		
IC12	6G	IC32	3B	R3	3G	C15	6D	C41	6G	C101	5B		
IC13	7G	IC33	4B	R4	10I	C16	5C	C42	5G				
IC14	7G	IC34	3A	R5	10F	C17	6C	C43	6H	RA1	9E		
IC15	5D	IC35	4A	R6	8F	C23	9B	C44	7G	RA2	10E		
IC16	5C	IC36	3C	R7	6B	C24	9A	C45	6G	RA3	6E		
IC17	7C	IC37	4D			C25	6B	C46	7H	RA4	7E		
IC18	10G	IC38	4I	C51	8H	C26	6A	C47	4H	RA5	5I		
IC19	8G	IC39	3I	C50	9H	C27	1C	C48	5G	RA6	4I		
IC20	8E	IC40	4G	C1	8H	C28	1A	C49	4G	RA7	10H		

SCK1125-00A
WF2 BOARD
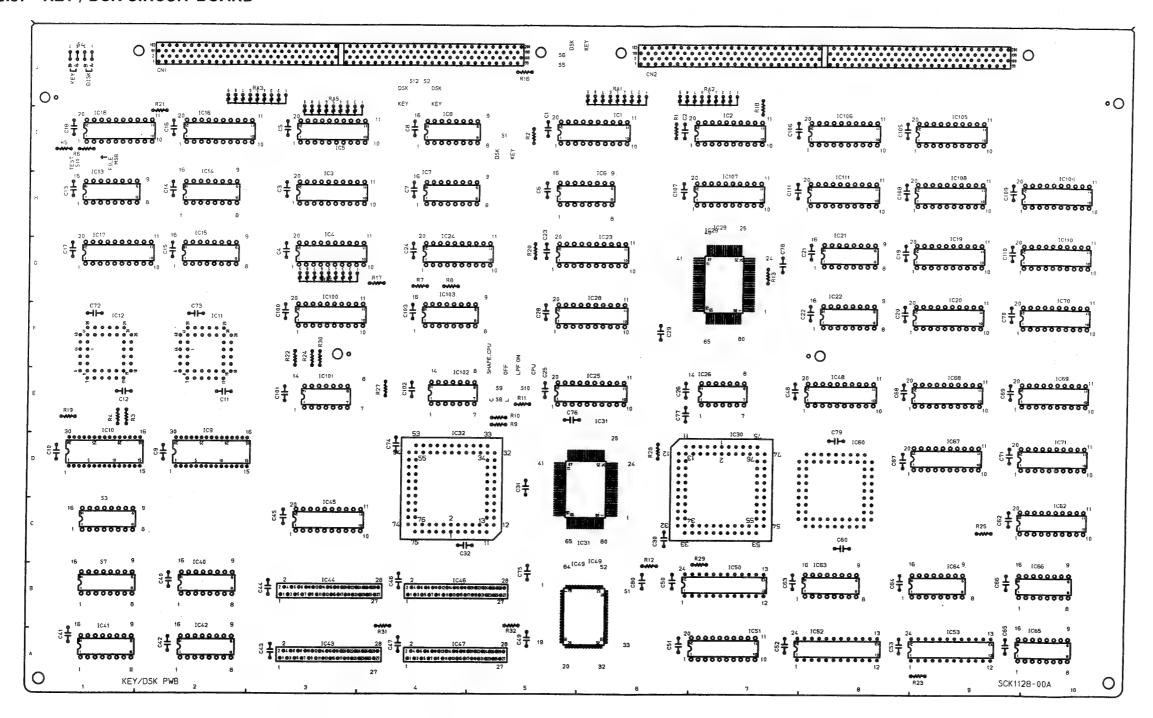
● Parts Location Table of WF2 board
- ● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	4I	IC22	3C	IC42	9C	C6	7H	C27	4C	C47	9G
IC2	4H	IC23	3B	IC43	9B	C7	7G	C28	5C	C48	2E
IC3	6H	IC24	2C	IC44	9A	C8	6I	C29	5B	C49	2G
IC4	6G	IC25	2B	IC45	9D	C9	5H	C30	4C	C50	2G
IC5	5G	IC26	2A	IC46	5F	C10	5I	C31	4B	C51	2F
IC6	7H	IC27	4D	IC47	9F	C11	7I	C32	4A		
IC7	7G	IC28	5C	IC48	2E	C12	7G	C33	5C	S1	2E
IC8	6I	IC29	5B	IC49	2G	C13	9I	C34	7C		
IC9	5H	IC30	4C	IC50	2G	C14	8I	C35	7B	CN1	1J
IC10	5I	IC31	4B	IC51	2F	C15	9H	C36	6C	CN2	6J
IC11	7I	IC32	4A			C16	9F	C37	6B		
IC12	7F	IC33	5D	R1	5J	C17	8H	C38	6A		
IC13	9I	IC34	7C	R2	3F	C18	9E	C39	7C		
IC14	8I	IC35	7B	R3	3F	C19	9D	C40	9C		
IC15	9H	IC36	6C			C20	9G	C41	9B		
IC16	10F	IC37	6B	C1	3I	C22	3C	C42	8C		
IC17	8H	IC38	6A	C2	3H	C23	3B	C43	8B		
IC18	10E	IC39	7D	C3	6H	C24	1C	C44	8A		
IC19	10C	IC40	10C	C4	6G	C25	1B	C45	9C		
IC20	9G	IC41	10B	C5	5G	C26	1A	C46	5G		

KEY/DSK PWB   SCK1128-00A
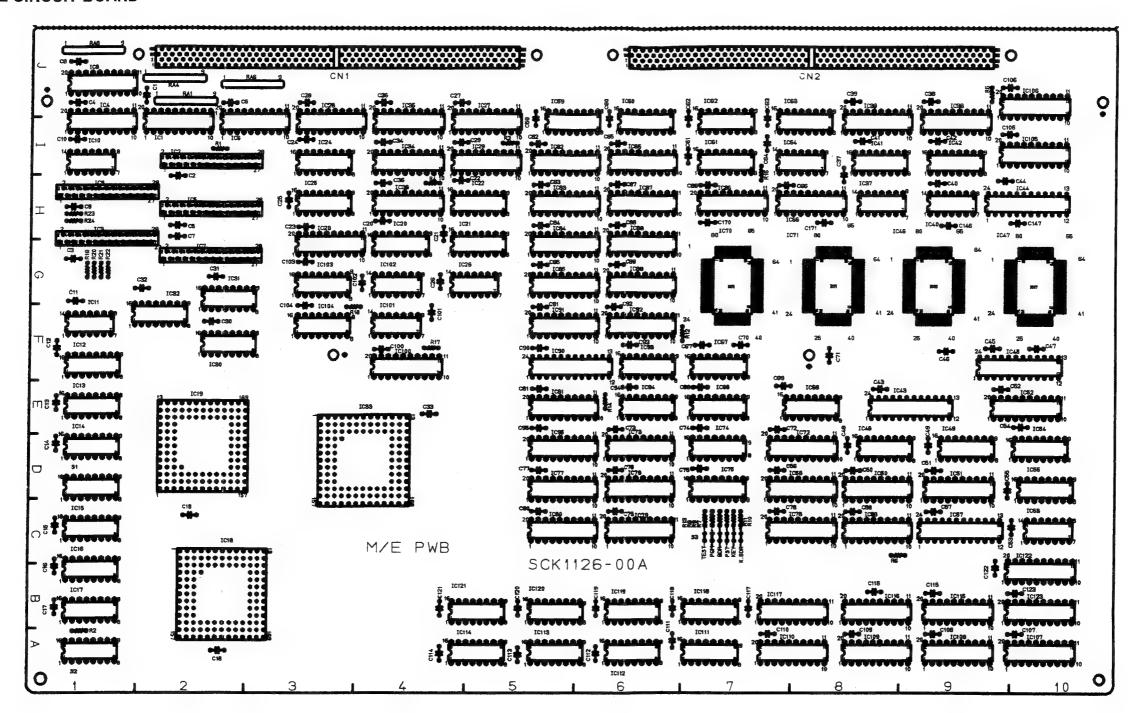
● **Parts Location Table of KEY board**

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	5I	IC21	8G	IC49	6B	IC105	9I	R13	7G	C3	3H	C23	5G	C51	7A	C78	8G	RA1	6I
IC2	7I	IC22	8F	IC50	7B	IC106	8I	R16	5J	C4	3G	C24	4G	C52	8A	C79	8D	RA2	7I
IC3	3H	IC23	5G	IC51	7A	IC107	7H	R17	4G	C5	3I	C25	5E	C53	9A	C100	3F	RA3	3I
IC4	3G	IC24	4G	IC52	8A	IC108	9F	R18	7I	C6	5H	C28	7E	C60	8C	C101	3E	RA4	3G
IC5	3I	IC25	5E	IC53	9A	IC109	10H	R19	1E	C7	4H	C28	5F	C62	10C	C101	3E		
IC6	5H	IC26	7E	IC60	8D	IC110	10G	R20	5G	C8	4I	C29	6F	C63	8B	C102	4E	S1	5I
IC7	4H	IC28	5F	IC62	10C	IC111	8H	R21	2I	C9	2D	C30	6C	C64	9B	C103	4F	S2	4I
IC8	4I	IC29	7G	IC63	8B			R22	3E	C10	1D	C31	5C	C65	10A	C105	9I	S3	1C
IC9	2D	IC30	7D	IC64	9B	R1	7I	R23	9A	C11	2E	C32	5C	C66	10B	C106	8I	S4	1J
IC10	1D	IC31	6D	IC65	10A	R2	5I	R24	3E	C12	1E	C40	2B	C67	9D	C107	7H	S5	6J
IC11	2F	IC32	4D	IC66	10B	R3	1E	R25	9C	C13	1H	C41	1A	C68	9E	C108	9H	S6	6J
IC12	1F	IC40	2B	IC67	9D	R4	1E	R27	4E	C14	2H	C42	2A	C69	10E	C109	10H	S7	1B
IC13	1H	IC41	1A	IC68	9E	R5	1I	R28	6D	C15	2G	C43	3A	C70	10F	C110	10G	S8	5E
IC14	2H	IC42	2A	IC69	10E	R6	1I	R29	7B	C16	2I	C44	3B	C71	10D	C111	8H	S9	5E
IC15	2G	IC43	3A	IC70	10F	R7	4G	R30	3E	C17	1G	C45	3C	C72	1F			S10	5E
IC16	2I	IC44	3B	IC71	10D	R8	4G	R31	4B	C18	1I	C46	4B	C73	2F	RA5	3I	S11	1I
IC17	1G	IC45	3C	IC100	3F	R9	5E	R32	5B	C19	9G	C47	4A	C74	4D			S12	4I
IC18	1I	IC46	4B	IC101	3E	R10	5E			C20	9F	C48	8E	C75	5B	CN1	1J		
IC19	9G	IC47	4A	IC102	4E	R11	5E	C1	5I	C21	8G	C49	5A	C76	6E	CN2	6J		
IC20	9F	IC48	8E	IC103	4F	R12	6B	C2	7I	C22	8F	C50	7B	C77	7E				

M/E PWB

SCK1126-00A
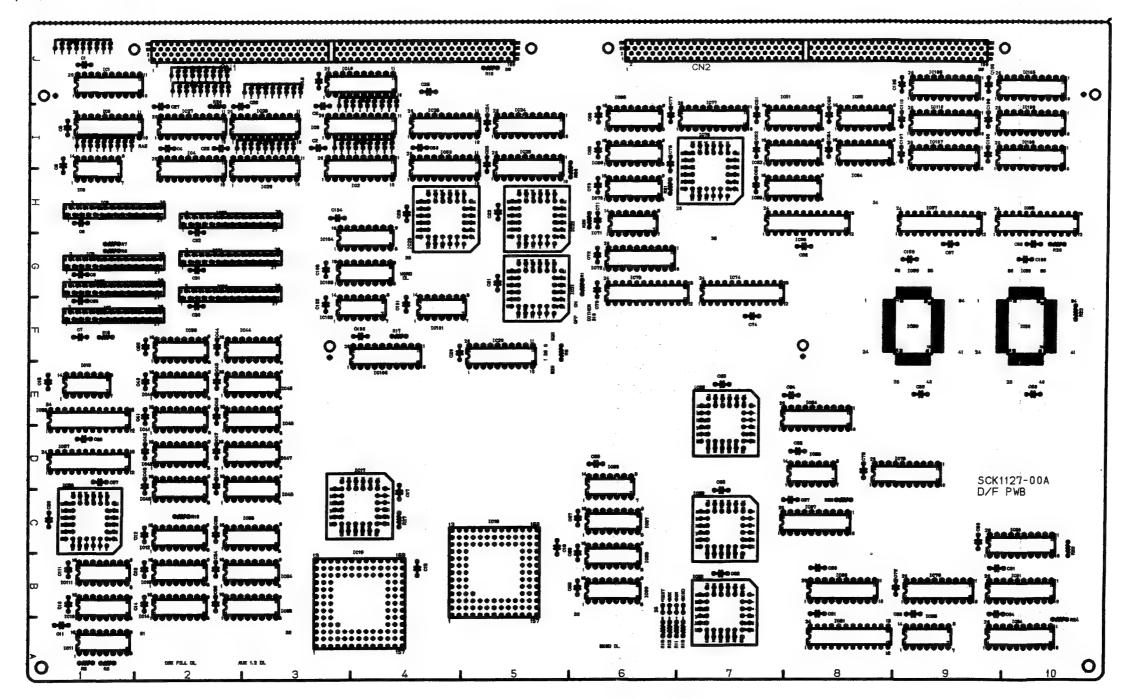
● Parts Location Table of M/E board

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc
IC1	2I	IC21	4G	IC41	8H	IC61	7H	IC81	5E	IC105	10H	R1	2I	R22	1G	C17	1B	C37	8H	C57	9C	C77	5D	C101	4F	C121	4B	CN1	1J
IC2	2H	IC22	4H	IC42	9H	IC62	7I	IC82	5H	IC106	10I	R2	1A	R23	1H	C18	2A	C38	9I	C58	8C	C78	8C	C102	4G	C122	10B	CN2	6J
IC3	1G	IC23	3G	IC43	8E	IC63	8I	IC83	5H	IC107	10A	R3	5I	R24	1H	C19	2C	C39	8I	C59	5I	C79	6C	C103	3G	C123	10B	RA1	2I
IC4	1I	IC24	3H	IC44	10H	IC64	8H	IC84	5G	IC108	9A	R4	4H			C20	4H	C40	9H	C60	6I	C80	5C	C104	3F	C146	9H	RA4	2J
IC5	2H	IC25	3H	IC45	9E	IC65	6H	IC85	5F	IC109	8A	R5	10I	C1	2I	C21	4G	C41	8I	C61	7H	C81	5E	C105	10I	C147	10H	RA6	3J
IC6	2I	IC26	4F	IC46	9G	IC66	8H	IC86	7H	IC110	7A	R6	9C	C2	2H	C22	4H	C42	9H	C62	7I	C82	5I	C106	10J	C170	7H	RA8	1J
IC7	2G	IC27	4I	IC47	10G	IC67	7E	IC87	6H	IC111	7A	R7	7C	C3	1G	C23	3G	C43	8E	C63	7I	C83	5H	C107	10A	C171	8H	S1	1C
IC8	1I	IC28	3I	IC48	8D	IC68	7E	IC88	6G	IC112	6A	R8	7C	C4	1I	C24	3I	C44	10H	C64	7I	C84	5H	C108	9A			S2	1A
IC9	1H	IC29	4H	IC49	9D	IC69	8E	IC89	6F	IC113	5A	R9	7C	C5	2H	C25	3H	C45	10F	C65	7I	C85	5G	C109	8A			S3	7C
IC10	1H	IC30	2F	IC50	8C	IC70	7G	IC90	5E	IC114	4A	R10	7C	C6	2I	C26	4G	C46	9F	C66	8H	C86	7H	C110	7A				
IC11	1F	IC31	2F	IC51	9C	IC71	8G	IC91	5F	IC115	9B	R11	7C	C7	2G	C27	4I	C47	10F	C67	7F	C87	6H	C111	7A				
IC12	1E	IC32	1F	IC52	10E	IC72	8D	IC92	6F	IC116	8B	R12	7F	C8	1J	C28	3I	C48	8D	C68	7E	C88	6H	C112	6A				
IC13	1E	IC33	4D	IC53	10C	IC73	6D	IC93	6E	IC117	7B	R13	7C	C9	1H	C29	4I	C49	9D	C69	8E	C89	6G	C113	5A				
IC14	1D	IC34	4H	IC54	10D	IC74	7D	IC94	6E	IC118	7B	R14	6E	C10	1I	C30	2F	C50	8D	C70	7F	C90	5F	C114	4A				
IC15	1C	IC35	4I	IC55	10C	IC75	7C	IC95	5D	IC119	6B	R15	7H	C11	1F	C31	2G	C51	9D	C71	8E	C91	5F	C115	9B				
IC16	1B	IC36	4H	IC56	8C	IC76	6C	IC100	4E	IC120	5B	R17	4F	C12	1E	C32	1G	C52	10E	C72	8D	C92	6F	C116	8B				
IC17	1B	IC37	8H	IC57	9C	IC77	5C	IC101	4F	IC121	4B	R18	3F	C13	1E	C33	4E	C53	10C	C73	6D	C93	6F	C117	7B				
IC18	2B	IC38	9I	IC58	8C	IC78	6C	IC102	4F	IC122	10B	R19	1G	C14	1D	C34	4I	C54	10D	C74	7D	C94	6E	C118	7B				
IC19	2D	IC39	8I	IC59	5I	IC79	6C	IC103	3F	IC123	10B	R20	1G	C15	1C	C35	4I	C55	10C	C75	7D	C95	5D	C119	6B				
IC20	4G	IC40	9H	IC60	6I	IC80	5C	IC104	3F			R21	1G	C16	1B	C36	4H	C56	8D	C76	6D	C100	4F	C120	5B				

3.39 D/F CIRCUIT BOARD

SCK1127-00A
D/F PWB

CN2

● Parts Location Table of D/F board

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	1I	IC27	2I	IC52	8H	IC80	10B	R1	6F	C1	1J	C27	2I	C52	7H	C80	10B	C160	10G
IC2	3H	IC28	2I	IC53	8H	IC81	8A	R5	1A	C2	3I	C28	2I	C53	7H	C81	8A		
IC3	3I	IC29	2H	IC54	8H	IC82	7B	R6	1A	C3	3I	C29	2I	C54	8H	C82	7B	CN1	1J
IC4	2H	IC30	2F	IC55	8I	IC83	9A	R7	1G	C4	2I	C30	2F	C55	8I	C83	9A	CN2	6J
IC5	1I	IC31	2G	IC56	8G	IC84	10A	R8	1G	C5	1I	C31	2G	C56	8G	C84	10A		
IC6	1H	IC32	2G	IC57	9G	IC85	1F	R9	6E	C6	1H	C32	2G	C57	9G	C85	1F	RA1	1J
IC7	1F	IC33	2B	IC58	10G	IC86	6C	R10	7A	C7	1F	C33	2C	C58	10G	C86	6D	RA2	4I
IC8	1G	IC34	2B	IC59	9F	IC87	6C	R11	7A	C8	1G	C34	2B	C59	9E	C87	6C	RA3	4I
IC9	1H	IC35	2A	IC60	10F	IC88	6B	R12	7A	C9	1G	C35	2B	C60	10E	C88	6B	RA4	2I
IC10	1A	IC36	1D	IC63	8C	IC89	6B	R13	7A	C10	1B	C36	1D	C63	8D	C89	6B	RA5	1I
IC11	1A	IC37	1D	IC64	8D	IC90	8B	R16	5J	C11	1A	C37	1D	C64	8E	C90	8B	RA27	2J
IC12	2B	IC38	1C	IC65	7D	IC91	10B	R17	4F	C12	2C	C38	1C	C65	7E	C91	10B	RA28	3I
IC13	2B	IC39	2E	IC66	7C	IC100	4E	R18	1F	C13	2B	C39	2E	C66	7C	C100	4F	RA29	3I
IC14	2A	IC40	2E	IC67	8C	IC101	4F	R19	2C	C14	2B	C40	2E	C67	8C	C101	4F		
IC16	1E	IC41	2D	IC68	8I	IC102	3F	R20	2I	C16	1E	C41	2D	C68	8I	C102	3F	S1	2A
IC17	4C	IC42	2D	IC69	6H	IC103	3G	R21	7H	C17	4C	C42	2D	C69	6H	C103	3G	S2	2A
IC18	5B	IC43	2C	IC70	6H	IC104	3G	R22	10F	C18	6B	C43	2C	C70	6H	C104	3H	S3	4G
IC19	4B	IC44	2E	IC71	6G	IC105	10I	R23	8C	C19	4B	C44	2E	C71	6G	C105	10I	S4	8G
IC20	5E	IC45	2E	IC72	6G	IC106	9I	R24	10A	C20	5E	C45	2E	C72	6G	C106	9I	S5	7B
IC21	5F	IC47	2D	IC73	6F	IC107	9H	R25	6G	C21	5F	C46	2D	C73	6F	C107	9H	S6	7G
IC22	5G	IC48	2C	IC74	7F	IC108	10H	R27	4C	C22	5E	C47	2D	C74	7F	C108	10H	S8	5E
IC23	4G	IC49	3I	IC76	7H	IC109	10I	R28	10G	C23	4G	C48	2C	C76	7H	C109	10I	S9	6A
IC24	5I	IC50	4H	IC77	7I	IC110	9I	R29	10B	C24	5I	C49	3I	C77	7I	C110	9I	S10	6F
IC25	5H	IC51	8I	IC78	9C	IC111	1B	R30	6H	C25	5H	C50	4I	C78	8D	C111	1B		
IC26	4I			IC79	9B					C26	4I	C51	7I	C79	9B	C159	9G		

SCK1122-00A
IF BOARD ASS'Y

CN1 CN2

CN3 CN4 CN5 CN6 CN7
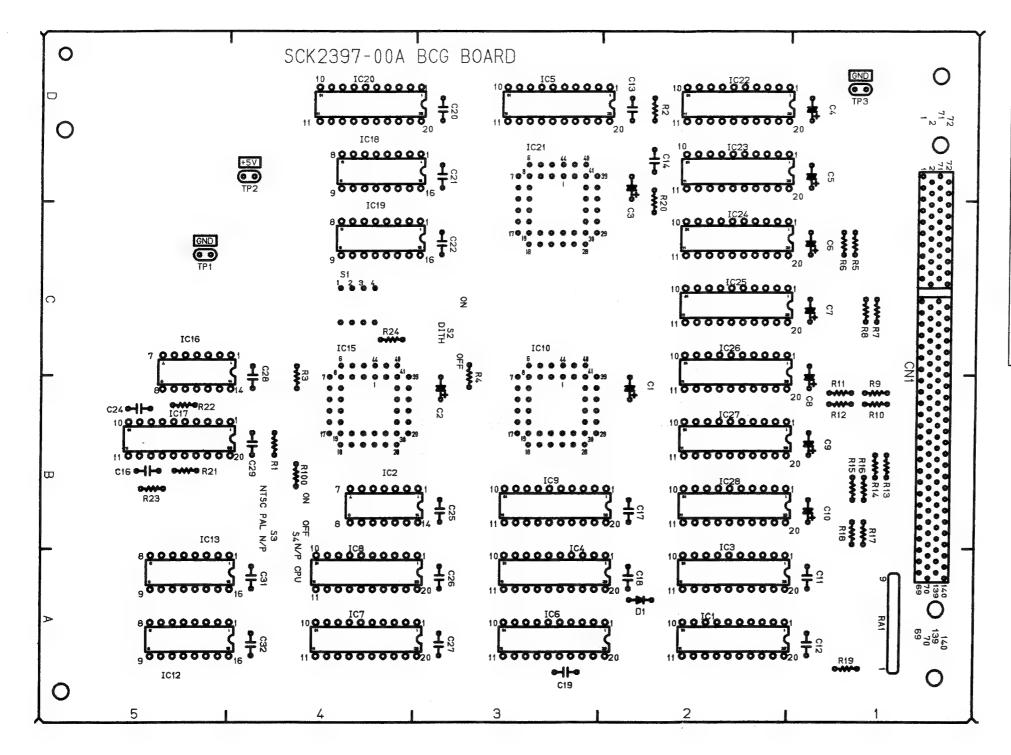
● **Parts Location Table of IF board**
  ● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.
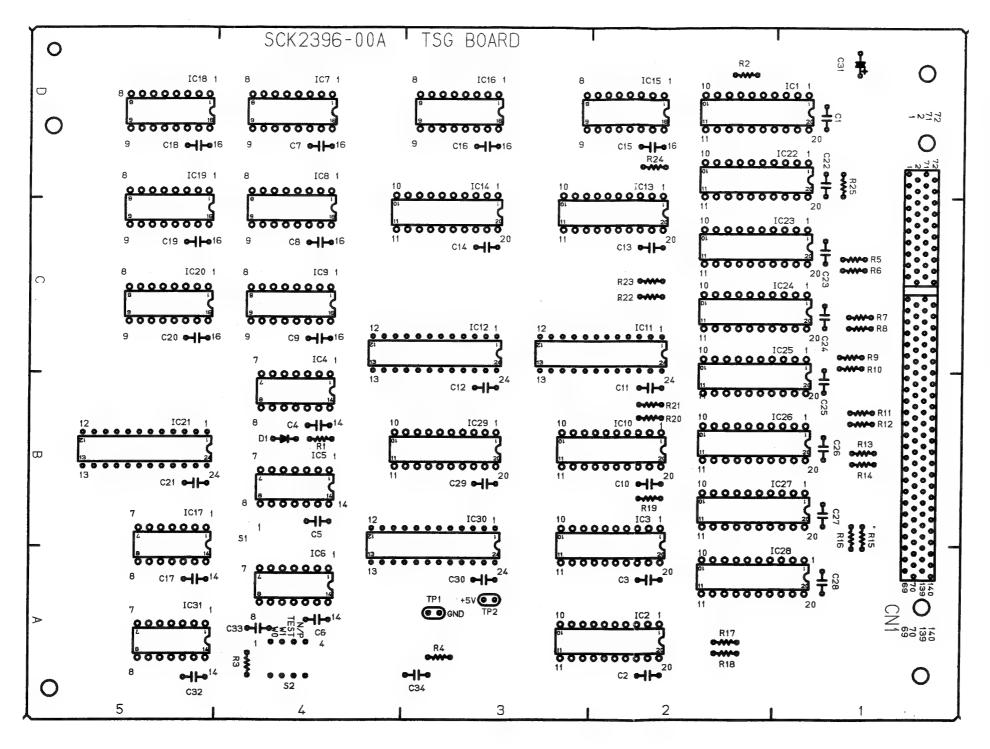
IC1	3F	IC22	7D	D12	10C	C13	3D	LC5	7C	CN2	6H	S1	3D
IC3	4F	IC23	2C	D13	10C	C14	5D	LC6	7C	CN7	6B	S2	3D
IC4	4F	IC24	3C	D14	6C	C15	5D	LC7	7C			S3	4D
IC5	5F	IC25	4C	D15	6C	C16	6D	LC8	7C	RA1	5D	S4	4D
IC6	6F	IC26	2B	D16	6C	C17	7D	LC9	8C	RA2	6C		
IC7	6F	IC27	4B	D17	6C	C18	8D	LC10	8C				
IC8	7F					C19	9D	LC11	8C	RY1	10D		
IC9	7F	IC28	6C	R1	10D	C20	3C	LC12	9C	RY2	7C		
IC10	8F					C21	3C	LC13	9C	RY3	7C		
IC11	9F	D1	10D	C1	3F	C22	3B	LC14	9C	RY4	7C		
IC12	3E	D2	6C	C3	4F	C23	2C	LC15	9C	RY5	8C		
IC13	3E	D3	7C	C4	4F	C24	3C	LC16	10C	RY6	8C		
IC14	5E	D4	7C	C5	5F	C25	4C	LC17	10C	RY7	8C		
IC15	6E	D5	8C	C6	5F	C26	2B			RY8	9C		
IC16	7E	D6	8C	C7	6F	C27	4B	CN4	3A	RY9	9C		
IC17	7E	D7	8C	C8	6F			CN5	4A	RY10	9C		
IC18	8E	D8	9C	C9	7F	LC1	6C	CN6	5A	RY11	10C		
IC19	9E	D9	9C	C10	8F	LC2	6C	CN3	2A	RY12	10C		
IC20	5D	D10	9C	C11	9F	LC3	6C			RY13	10C		
IC21	6D	D11	10C	C12	3D	LC4	6C	CN1	2H				

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SCK2397-00A BCG BOARD

● **Parts Location Table of BCG board**

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	1A	R2	2D	C6	1C		
IC2	3B	R3	4B	C7	1C	S1	3C
IC3	1A	R4	3B	C8	1B	S2	3C
IC4	2A	R5	1C	C9	1B	S3	4B
IC5	2D	R6	1C	C10	1B	S4	4B
IC6	2A	R7	1C	C11	1A		
IC7	3A	R8	1C	C12	1A	CN1	1D
IC8	3A	R9	1B	C13	2D		
IC9	2B	R10	1B	C14	2D		
IC10	2B	R11	1B	C16	4B		
IC12	4A	R12	1B	C17	2B		
IC13	4A	R13	1B	C18	2A		
IC15	3B	R14	1B	C19	2A		
IC16	4C	R15	1B	C20	3D		
IC17	4B	R16	1B	C21	3D		
IC18	3D	R17	1B	C22	3C		
IC19	3C	R18	1B	C24	5B		
IC20	3D	R19	1A	C25	3B		
IC21	2C	R20	2C	C26	3A		
IC22	1D	R21	4B	C27	3A		
IC23	1D	R22	4B	C28	4C		
IC24	1C	R23	5B	C29	4B		
IC25	1C	R24	3C	C31	4A		
IC26	1C	R100	4B	C32	4A		
IC27	1B						
IC28	1B			C1	2B	TP1	4C
				C2	3B	TP2	4D
D1	2A			C3	2D	TP3	1D
				C4	1D		
R1	4B			C5	1D	RA1	1A

SCK2396-00A TSG BOARD

● **Parts Location Table of TSG board**
● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	1D	IC31	4A	C1	1D	C31	1D
IC2	2A			C2	2A	C32	4A
IC3	2B	D1	4B	C3	2A	C33	4A
IC4	4B			C4	4B	C34	3A
IC5	4B	R1	4B	C5	4B		
IC6	4A	R2	1D	C6	4A	TP1	3A
IC7	4D	R3	4A	C7	4D	TP2	3A
IC8	4C	R4	3A	C8	4C		
IC9	4C	R5	1C	C9	4C	S2	4A
IC10	2B	R6	1C	C10	2B		
IC11	2C	R7	1C	C11	2B	CN1	1D
IC12	3C	R8	1C	C12	3B		
IC13	2D	R9	1C	C13	2C		
IC14	3D	R10	1C	C14	3C		
IC15	2D	R11	1B	C15	2D		
IC16	3D	R12	1B	C16	3D		
IC17	4B	R13	1B	C17	4A		
IC18	4D	R14	1B	C18	4D		
IC19	4D	R15	1B	C19	4C		
IC20	4C	R16	1B	C20	4C		
IC21	4B	R17	2A	C21	4B		
IC22	1D	R18	2A	C22	1D		
IC23	1C	R19	2B	C23	1C		
IC24	1C	R20	2B	C24	1C		
IC25	1C	R21	2B	C25	1C		
IC26	1B	R22	2C	C26	1B		
IC27	1B	R23	2C	C27	1B		
IC28	1A	R24	2D	C28	1A		
IC29	3B	R25	1D	C29	3B		
IC30	3B			C30	3A		

3-68   3-68

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Side A

Side B

SCK2395-00A SSG BOARD
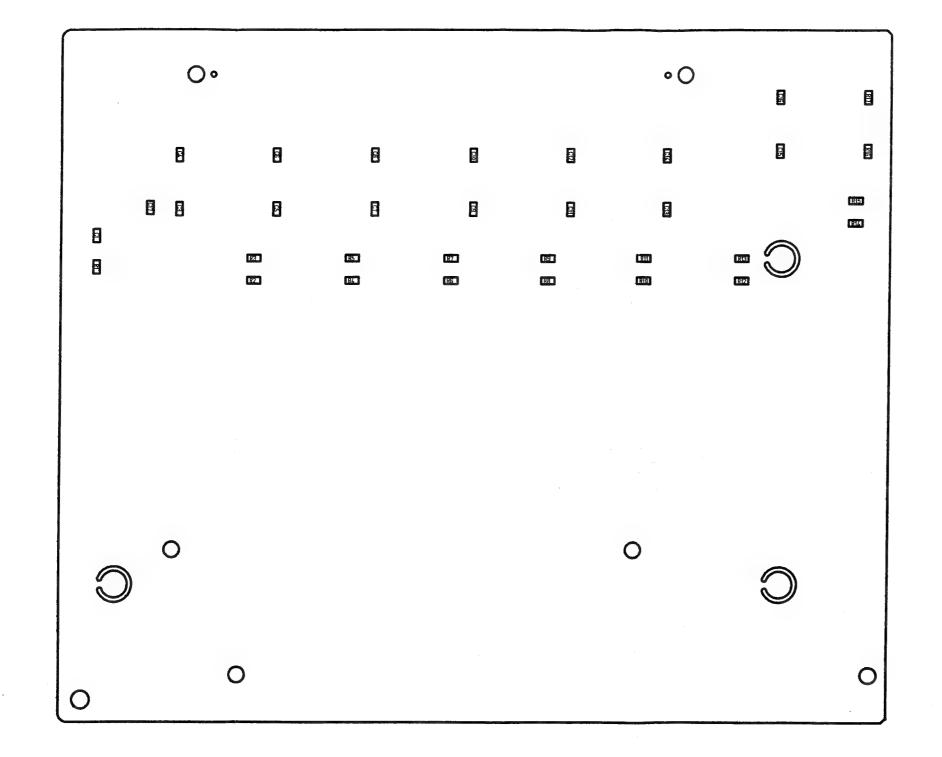
● **Parts Location Table of SSG board**
  ● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.
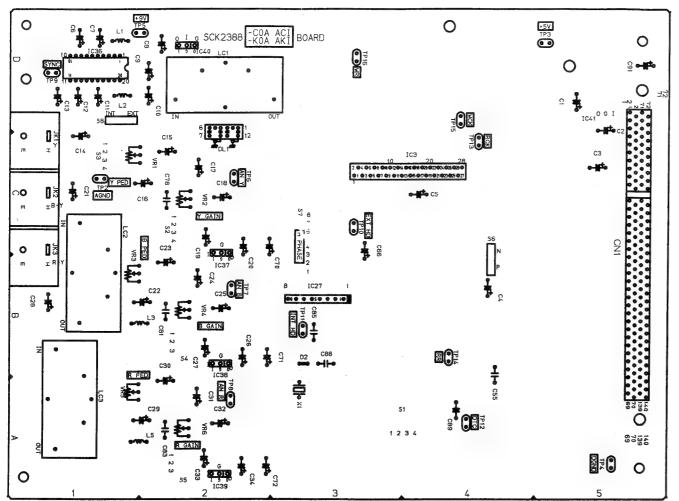
IC12	A-4B	IC30	A-4C	R1	B-1C	R31	B-1B	C9	A-1C	C40	B-1D	C70	A-1A	TP4	A-4B
		IC31	A-2B	R2	B-1C	R32	B-1B	C10	A-1C	C41	B-4A	C71	A-1B	TP5	A-4C
IC1	B-4A	IC32	A-2A	R3	B-1C	R33	B-1B	C11	A-2C	C42	A-2D	C72	B-2B		
IC2	B-4B	IC33	A-4D	R4	B-2C	R34	B-2B	C12	A-2C	C43	A-2C	C73	B-1B	LC1	A-2A
IC3	B-2C	IC34	B-3A	R5	B-2C	R35	B-2B	C13	B-2C	C44	A-1D	C74	B-2A		
IC4	B-3B			R6	B-2C	R36	B-2A	C14	B-2C	C45	A-1D	C75	B-1A	CN1	A-5D
IC5	A-4B	Q1	B-1C	R7	B-2B	R37	B-2A	C15	B-2C	C46	A-1D	C76	B-4D		
		Q2	B-1C	R8	B-3B	R38	B-1A	C16	A-3B	C47	A-4B	C77	A-4D		A-2A
IC7	A-2C	Q3	B-4C	R9	B-2A	R39	B-1A	C17	B-3B	C48	B-2D	C78	B-4C		
IC8	A-2B			R10	B-2A	R40	B-2B	C18	B-4B	C49	B-2D	C79	A-4C	S1	A-3C
IC9	B-3A	D1	B-1C	R11	B-2D	R41	B-2B	C19	A-2C	C50	B-2D	C80	B-4D	S2	A-3C
IC10	A-2D			R12	B-2D	R42	B-2A	C20	A-2C	C51	A-4C	C81	B-4D	S3	A-3D
IC11	A-4A	R61	B-4C	R13	B-1D	R43	B-2A	C21	A-2C	C52	A-4C	C82	A-4D		
IC13	B-4C	R62	B-4C	R14	B-1D	R51	B-1A	C22	A-2B	C53	B-3B	C83	A-4D	JK1	A-1C
IC14	B-3B	R63	B-4C	R15	B-1D	R52	B-1A	C23	A-2B	C54	B-3C	C84	B-4C	JK2	A-1C
IC15	A-3C	R64	B-4C	R16	B-1A	R54	B-3B	C24	A-2C	C55	A-3C	C85	B-4D	JK3	A-1B
IC16	B-4C	R65	B-4C	R17	B-3C	R55	B-4C	C25	A-2B	C56	B-4C	C86	A-4C	JK4	A-1B
IC17	B-3C	R66	B-4C	R18	B-1D	R56	B-4C	C26	A-2B	C57	B-3C	C90	B-3B	JK5	A-1A
IC18	B-3C	R67	B-4C	R19	B-2D	R57	B-4C	C27	A-2B	C58	B-4D	C91	B-3A		
IC19	A-3D	R68	B-4C	R20	B-1D	R58	B-4D	C28	A-2B	C59	B-4C	VC1	A-3A	X1	A-3B
IC20	B-4D	R69	B-4C	R21	B-2D	R59	B-4D	C29	A-2B	C60	A-3A				
IC21	B-4C	R70	B-4C	R22	B-1D	R60	B-4D	C30	A-3A	C61	B-3D	L1	A-2C		
IC22	A-4A	R71	B-4C	R23	B-1C			C31	B-3B	C62	A-4C	L2	A-2C		
IC23	B-4A	R72	B-4C	R24	B-1C	C1	A-1C	C32	B-3B	C63	B-3C	L3	A-3A		
IC24	A-4C	R73	B-4C	R25	B-3C	C2	B-4A	C34	B-3A	C64	B-4A	L4	A-2D		
IC25	B-3D	R74	B-4C	R26	B-2B	C3	B-2B	C35	B-2D	C65	A-4B	L5	A-2D		
IC26	A-4C	R75	B-4C	R27	B-2B	C5	A-2C	C36	B-2D	C66	A-4C				
IC27	B-4B	R76	B-4C	R28	B-1B	C6	B-2C	C37	A-2D	C67	B-4B	TP1	A-2C		
IC28	A-2A	R77	B-4C	R29	B-1B	C7	B-2C	C38	A-2D	C68	A-2B	TP2	A-4A		
IC29	A-1A	R78	B-4C	R30	B-2B	C8	B-2C	C39	B-1D	C69	A-2A	TP3	A-4B		

3.44 BUFFER1 CIRCUIT BOARD

3.45   BUFFER2 CIRCUIT BOARD

Side A

Side B
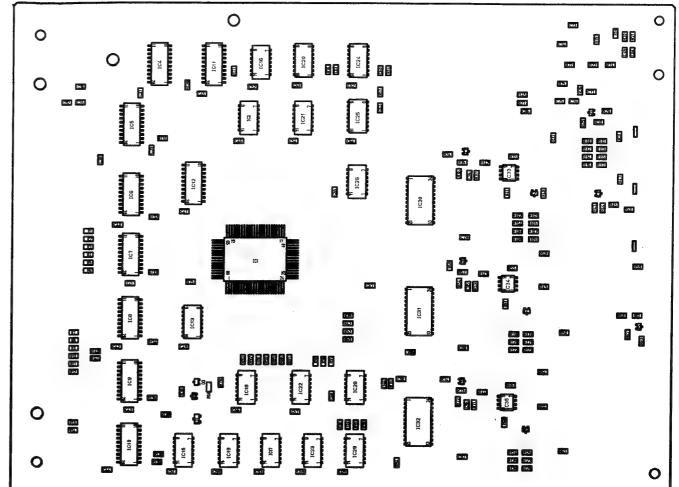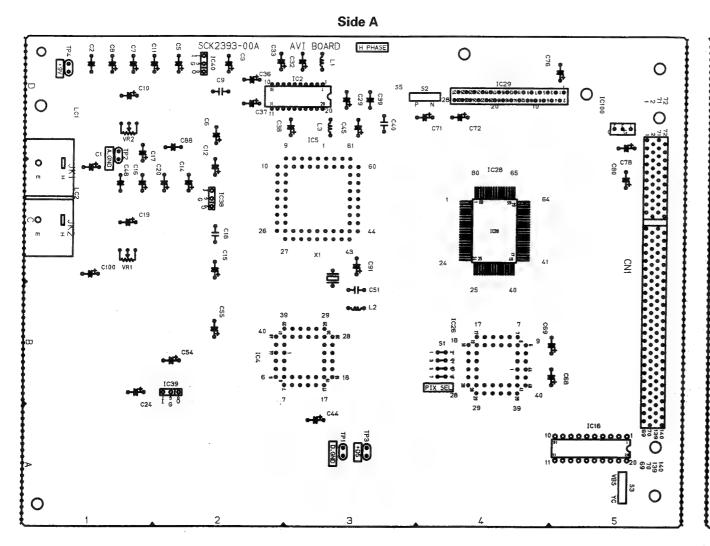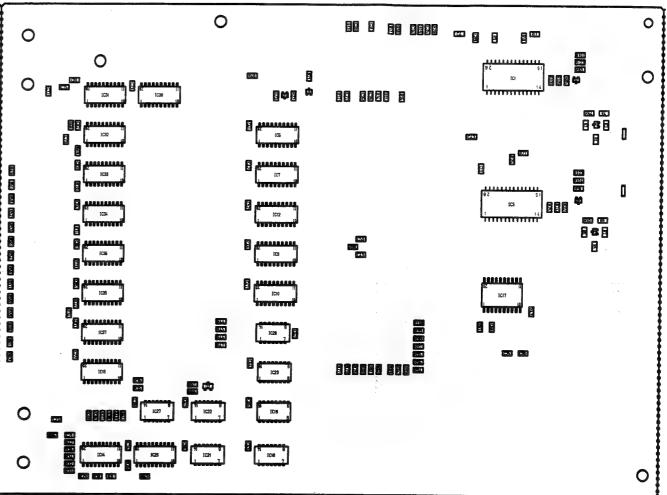
● **Parts Location Table of ACI board**

  ● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	B-4B	IC37	A-3C	R12	B-5A	R47	B-1C	R90	B-4B	R125	B-2A	C9	A-2D	C44	B-5A	C80	B-2B	TP13	A-4C
IC2	B-4C	IC38	A-3B	R13	B-5A	R48	B-2B	R91	B-4B	R126	B-2A	C10	A-2D	C45	B-4D	C81	A-2B	TP14	A-4B
IC3	A-3C	IC39	A-3A	R14	B-5A	R49	B-2B	R92	B-4B	R127	B-2A	C11	A-2D	C46	B-4C	C82	B-2A	TP15	A-4D
IC4	B-5D	IC40	A-2D	R15	B-3D	R50	B-2B	R93	B-4B	R128	B-2A	C12	A-1D	C47	B-4C	C83	A-2A	TP16	A-3D
IC5	B-5C	IC41	A-5D	R16	B-3D	R51	B-2B	R94	B-3A	R129	B-2A	C13	A-1D	C48	B-1D	C84	B-1D		
IC6	B-5C			R17	B-3D	R52	B-3B	R95	B-3B	R130	B-4D	C14	A-2C	C49	B-4B	C85	A-3B	S8	A-2D
IC7	B-5B	Q1	B-2D	R18	B-1D	R53	B-2B	R96	B-3B	R131	B-5C	C15	A-2C	C51	B-4A	C86	B-2D		
IC8	B-5B	Q2	B-2C	R19	B-2D	R54	B-2B	R97	B-3B	R132	B-5C	C16	A-2C	C52	B-4D	C88	A-3B	CN1	A-5D
IC9	B-5A	Q3	B-1C	R20	B-1D	R55	B-2B	R98	B-3A	R133	B-5B	C17	A-2C	C53	B-4D	C89	A-4A		
IC10	B-5A	Q4	B-2B	R21	B-1D	R56	B-4A	R99	B-3A	R134	B-5A	C18	A-3C	C54	B-4C	C90	B-3A	S1	A-4A
IC11	B-4D	Q5	B-2A	R22	B-2D	R57	B-2B	R100	B-3A	R135	B-5A	C19	A-2C	C55	A-4A	C91	A-6D	S2	A-2C
IC12	B-4C	Q6	B-2A	R23	B-2A	R58	B-3B	R101	B-3A	R136	B-5A	C20	A-3B	C56	B-4A	C92	B-5D	S3	A-2C
IC13	B-4B	Q7	B-2C	R24	B-1D	R59	B-3B	R102	B-2C	R138	B-5A	C21	A-1C	C57	B-4A	C93	B-4A	S4	A-2B
IC15	B-4A	Q8	B-2B	R25	B-2D	R60	B-1B	R103	B-2C	R139	B-5A	C22	A-2B	C58	B-4A	C94	B-2C	S5	A-2A
IC16	B-4D	Q9	B-2A	R26	B-2B	R61	B-1B	R104	B-2C	R140	B-5B	C23	A-2B	C59	B-4A	C95	B-2B	S6	A-4B
IC17	B-4A	Q10	B-4A	R27	B-2D	R62	B-1B	R105	B-2C	R141	B-5B	C24	A-2B	C60	B-3D	C96	B-2A	S7	A-3B
IC18	B-4A			R28	B-1D	R63	B-1B	R106	B-2C	R142	B-2C	C25	A-3B	C61	B-3D				
IC19	B-4A	D1	B-4A	R29	B-2D	R64	B-2B	R107	B-2C	R143	B-2B	C26	A-3B	C62	B-3D	L1	A-2D	LC1	A-2D
IC20	B-4D	D2	A-3B	R30	B-1D	R65	B-2A	R108	B-2C	R144	B-2B	C27	A-2B	C63	B-1D	L2	A-2D	LC2	A-1C
IC21	B-4C	D3	B-4A	R31	B-1C	R66	B-2A	R109	B-2C			C28	A-1B	C64	B-5A	L3	A-2B	LC3	A-1B
IC22	B-4A			R32	B-2C	R67	B-2A	R110	B-2C	VR1	A-2C	C29	A-2A	C65	B-3C	L5	A-2A		
IC23	B-3A	R146	B-3A	R33	B-2C	R68	B-2A	R111	B-1C	VR2	A-2C	C30	A-2A	C66	A-3B			JK1	A-1C
IC24	B-3D	R145	B-2D	R34	B-3C	R69	B-3B	R112	B-2B	VR3	A-2B	C31	A-2A	C67	B-3B	DL1	A-3D	JK2	A-1C
IC25	B-3C			R35	B-2C	R79	B-4A	R113	B-1C	VR4	A-3A	C32	A-3A	C68	B-3A			JK3	A-1C
IC26	B-3C	R1	B-5C	R36	B-2C	R71	B-2A	R114	B-2C	VR5	A-2A	C33	A-2A	C69	B-3A	TP2	A-2C		
IC27	A-3B	R2	B-5C	R37	B-2C	R72	B-2A	R115	B-1C	VR6	A-2A	C34	A-3A	C70	A-3B	TP3	A-5D	X1	A-3A
IC28	B-3A	R3	B-5B	R38	B-4A	R73	B-2A	R116	B-2C			C35	B-5D	C71	A-3B	TP4	A-5A		
IC29	B-3A	R4	B-5B	R39	B-3B	R74	B-3A	R117	B-1C	C1	A-5D	C36	B-5D	C72	A-3A	TP5	A-2D		
IC30	B-3C	R5	B-5B	R40	B-2B	R75	B-4B	R118	B-2B	C2	A-5C	C37	B-5C	C73	B-2D	TP6	A-3C		
IC31	B-3B	R6	B-5C	R41	B-2B	R76	B-3A	R119	B-2B	C3	A-5C	C38	B-5C	C74	B-2D	TP7	A-3B		
IC32	B-3A	R7	B-5B	R42	B-3B	R77	B-4D	R120	B-2D	C4	A-4B	C39	B-5C	C75	B-2D	TP8	A-3A		
IC33	B-2C	R8	B-5B	R43	B-2B	R86	B-3B	R121	B-2D	C5	A-4C	C40	B-5C	C76	B-2D	TP9	A-1D		
IC34	B-2B	R9	B-5B	R44	B-1C	R87	B-4B	R122	B-2B	C6	A-1D	C41	B-5B	C77	B-2C	TP10	A-3C		
IC35	B-2A	R10	B-5B	R45	B-1C	R88	B-4B	R123	B-2B	C7	A-2D	C42	B-5B	C78	A-2C	TP11	A-3B		
IC36	A-2D	R11	B-5B	R46	B-1C	R89	B-4B	R124	B-2A	C8	A-2D	C43	B-5A	C79	B-2C	TP12	A-4A		

3.47 AVI (KM-BK5002) CIRCUIT BOARD (OPTIONAL)

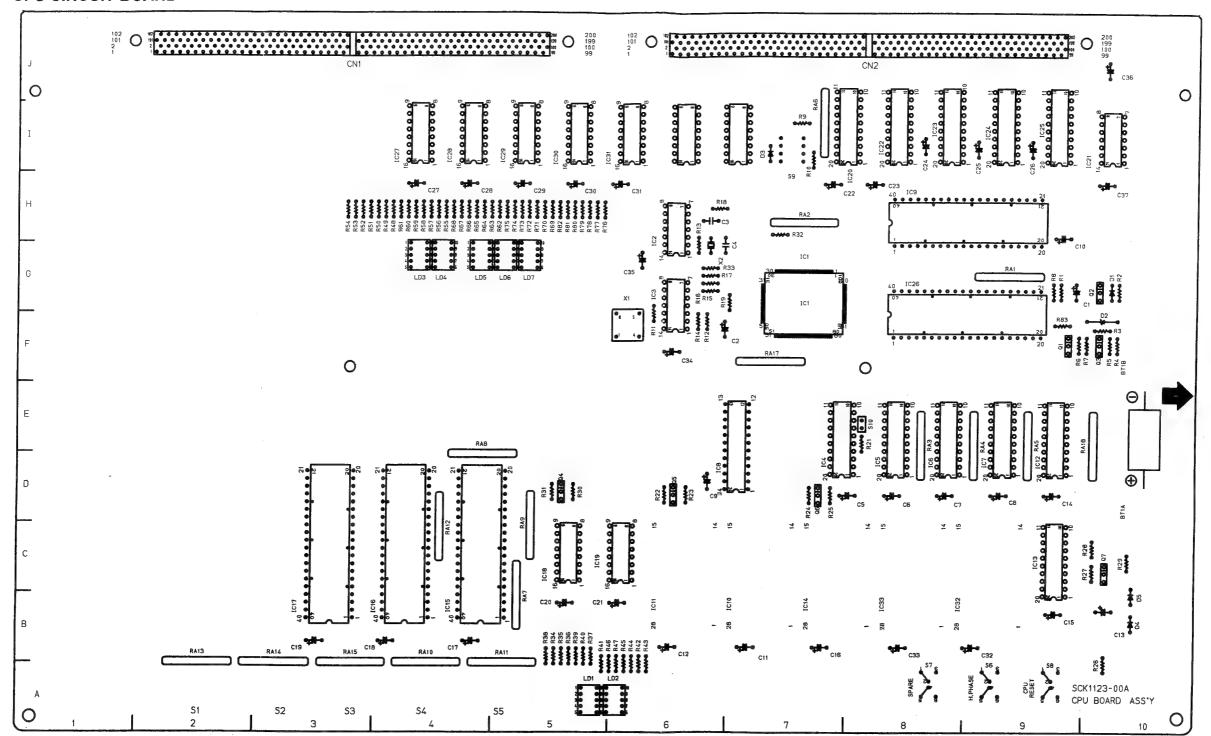**Side A**

Side B
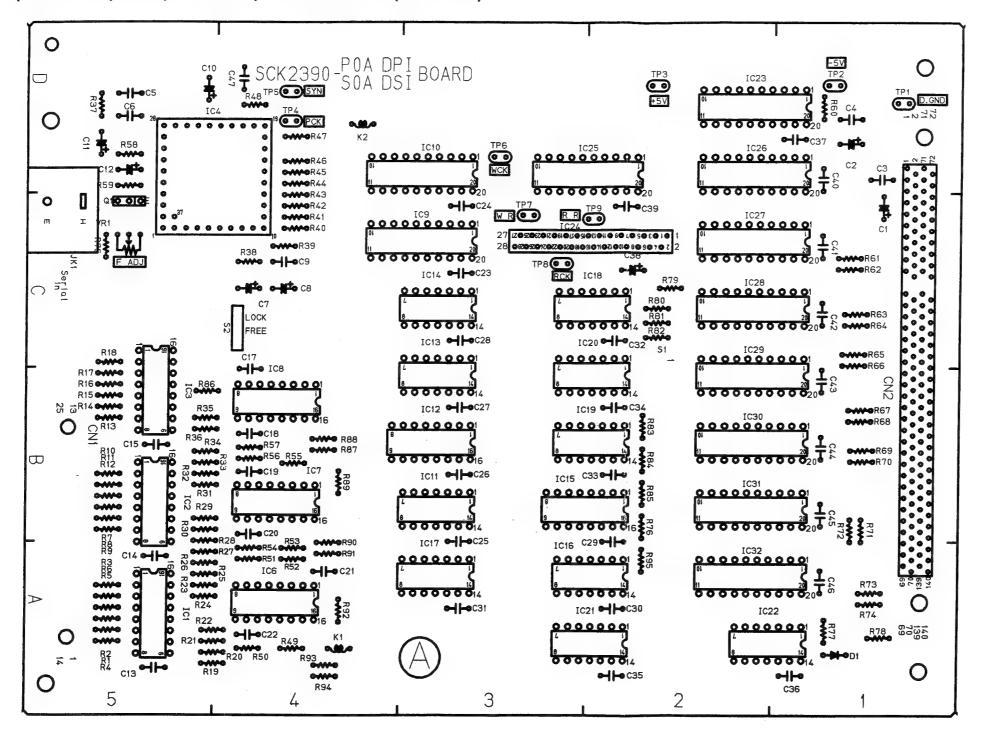
● **Parts Location Table of AVI board**
  ● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.
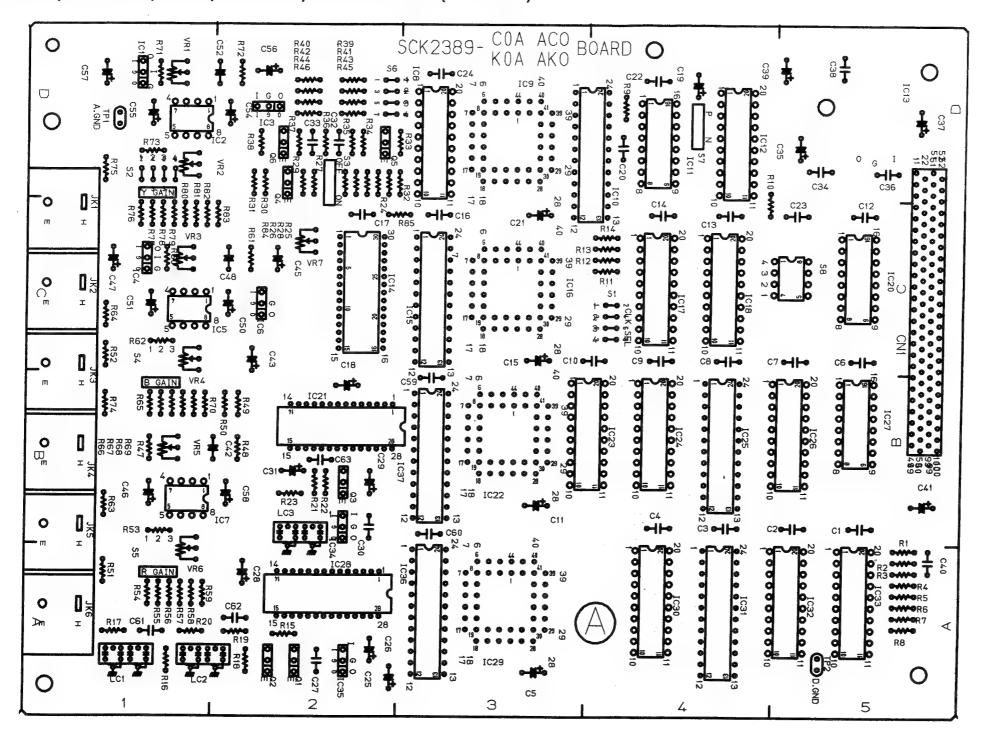
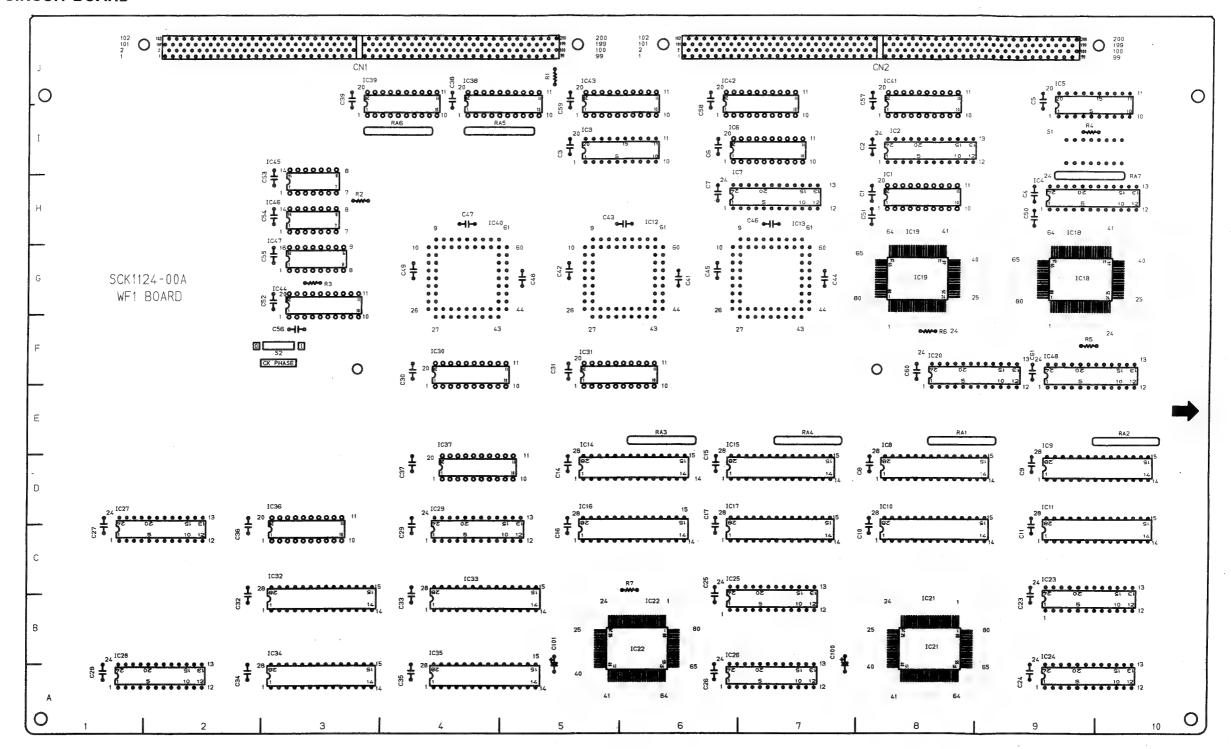| Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc	Sym	Loc
IC1	B-2D	IC35	B-5B	R14	B-3D	R44	B-4B	R74	B-5B	R105	B-2D	C25	B-2B	C60	B-2B	C91	A-3C
IC2	A-3D	IC36	B-5B	R15	B-3D	R45	B-4B	R75	B-5A	R106	B-2D	C26	B-3D	C62	B-3B	C100	A-1C
IC3	B-2C	IC37	B-5B	R16	B-3D	R46	B-4B	R76	B-5A			C27	B-3D	C63	B-4A		
IC4	A-3B	IC38	A-2C	R17	B-3D	R47	B-4B	R77	B-3B	VR1	A-2C	C28	B-3D	C64	B-4B	L1	A-3D
IC5	A-3C	IC39	A-3C	R18	A-2B	R48	B-4D	R78	B-3B	VR2	A-2D	C29	A-3D	C65	B-4A	L2	A-3B
IC6	B-4C	IC40	A-2D	R19	B-3D	R49	B-6C	R79	B-3B			C30	B-3D	C66	B-4A	L3	A-3D
IC7	B-4C	IC100	A-5D	R20	B-3D	R50	B-6C	R80	B-3B	C1	A-1C	C31	B-3D	C67	B-4A		
IC9	B-4B			R21	B-3D	R51	B-6C	R81	B-3B	C2	A-1D	C32	A-3D	C68	A-5B	TP1	A-3A
IC10	B-4B	Q1	B-1D	R22	B-4D	R52	B-6C	R82	B-3B	C3	A-2D	C33	A-3D	C69	A-5B	TP2	A-2C
IC12	B-4C	Q2	B-1C	R23	B-4D	R53	B-6C	R83	B-3B	C4	B-2D	C34	B-2D	C70	B-5A	TP3	A-3A
IC14	B-5A	Q3	B-4D	R24	B-2C	R54	B-6B	R84	B-3B	C5	A-2D	C35	B-3D	C71	A-4D	TP4	A-1D
IC15	B-5A	Q4	B-2D	R25	B-2C	R55	B-6C	R85	B-2D	C6	A-2D	C36	A-3D	C72	A-4D		
IC16	A-5A	Q5	B-2C	R26	B-2C	R56	B-6B	R86	B-5A	C7	A-2D	C37	A-3D	C73	B-5D	JK1	A-1C
IC17	B-2B			R27	B-2C	R57	B-6B	R87	B-2B	C8	A-2D	C38	A-3D	C74	B-5A	JK2	A-1C
IC18	B-4A	D1	B-3D	R28	B-5A	R58	B-6B	R88	B-3C	C9	A-2D	C39	A-3D	C75	B-5D		
IC19	B-4A	D2	B-4A	R29	B-5A	R59	B-6B	R90	B-1C	C10	A-2D	C40	A-3D	C76	A-5D	CN1	A-5D
IC20	B-4B			R30		R60	B-6B	R91	B-2C	C11	A-2D	C41	B-4C	C77	B-5D		
IC21	B-4A	R1	B-1C	R31	B-5A	R61	B-6B	R92	B-2C	C12	A-2C	C42	B-4C	C78	A-5D	S1	A-4B
IC22	B-4A	R2	B-1D	R32	B-5A	R62	B-6B	R93	B-3B	C13	B-2C	C43	B-2C	C79	B-5C	S5	A-3D
IC23	B-4A	R3	B-1D	R33	B-5A	R63	B-5A	R94	B-3B	C14	A-2C	C44	A-3A	C80	A-5C		
IC25	B-5A	R4	B-1D	R34	B-5A	R64	B-1D	R95	B-3B	C15	A-2C	C45	A-3D	C81	B-5D	LC1	A-1D
IC26	A-4B	R5	B-1C	R35	B-5A	R65	B-2D	R96	B-3B	C16	A-2C	C46	B-4C	C82	B-5C	LC2	A-1C
IC27	B-5A	R6	B-1C	R36	B-5A	R66	B-5A	R97	B-3B	C17	A-2C	C47	B-4B	C83	B-5C		
IC28	A-4C	R7	B-1C	R37	B-1C	R67	B-4A	R98	B-3B	C18	A-2C	C48	A-2C	C84	B-5C	S3	A-5A
IC29	A-5D	R8	B-1C	R38	B-5A	R68	B-5C	R99	B-3B	C19	A-2C	C49	B-3B	C85	B-5B	S2	A-4D
IC30	B-5D	R9	B-2D	R39	B-5A	R69	B-5A	R100	B-3B	C20	A-2C	C50	B-3C	C86	B-5C		
IC31	B-5D	R10	B-2D	R40	B-5A	R70	B-5C	R101	B-2D	C21	B-5A	C51	A-3B	C87	B-5B	X1	A-3B
IC32	B-5C	R11	B-2D	R41	B-5A	R71	B-5C	R102	B-2D	C22	B-5B	C52	B-4C	C88	A-2D		
IC33	B-5C	R12	B-3D	R42	B-5A	R72	B-5B	R103	B-2C	C23	B-5A	C54	A-2B	C89	B-2D		
IC34	B-5C	R13	B-3D	R43	B-2B	R73	B-5B	R104	B-2C	C24	A-2B	C55	A-2B	C90	B-2B		

● **Parts Location Table of DPI board**

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.
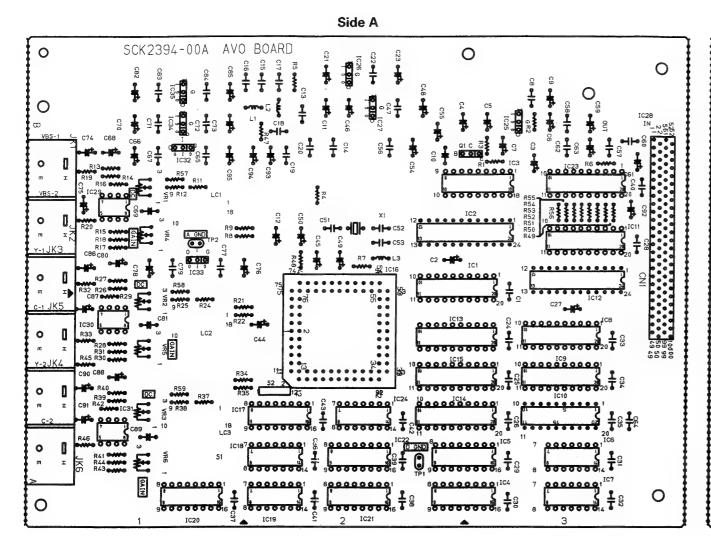
IC1	4A	IC24	2C	R9	5B	R31	4B	R53	4A	R75	5C	VR1	4C	C20	4B	C42	1C	K1	3A
IC2	4B	IC25	2D	R10	5B	R32	4B	R54	4A	R76	2B			C21	4A	C43	1B	K2	3D
IC3	4C	IC26	1D	R11	5B	R33	4B	R55	4B	R77	1A	C47	4D	C22	4A	C44	1B		
IC4	4C	IC27	1C	R12	5B	R34	4B	R56	4B	R78	1A			C23	3C	C45	1B	JK1	5C
IC6	4A	IC28	1C	R13	5B	R35	4B	R57	4B	R79	2C	C1	1C	C24	3C	C46	1A		
IC7	4B	IC29	1C	R14	5B	R36	4B	R58	4D	R80	2C	C2	1D	C25	3B				
IC8	4B	IC30	1B	R15	5B	R37	5D	R59	4D	R81	2C	C3	1D	C26	3B	TP6	3D		
IC9	3C	IC31	1B	R16	5B	R38	4C	R60	1D	R82	2C	C4	1D	C27	3B				
IC10	3D	IC32	1A	R17	5B	R39	4C	R61	1C	R83	2B	C5	4D	C28	3C	TP1	1D		
IC11	3B			R18	5C	R40	4C	R62	1C	R84	2B	C6	4D	C29	2B	TP2	1D		
IC12	3B	Q1	4C	R19	4A	R41	4C	R63	1C	R85	2B	C7	4C	C30	2A	TP3	2D		
IC13	3C			R20	4A	R42	4C	R64	1C	R86	4B	C8	4C	C31	3A	TP4	4D		
IC14	3C	D1	1A	R21	4A	R43	4C	R65	1C	R87	4B	C9	4C	C32	2C	TP5	4D		
IC15	2B			R22	4A	R44	4D	R66	1C	R88	4B	C10	4D	C33	2B	TP7	2C		
IC16	2A	R1	5A	R23	4A	R45	4D	R67	1B	R89	3B	C11	5D	C34	2B	TP8	2C		
IC17	3A	R2	5A	R24	4A	R46	4D	R68	1B	R90	4A	C12	4D	C35	2A	TP9	2C		
IC18	2C	R3	5A	R25	4A	R47	4D	R69	1B	R91	4A	C13	4A	C36	1A				
IC19	2B	R4	5A	R26	4A	R48	4D	R70	1B	R92	3A	C14	4A	C37	1D	CN1	5B		
IC20	2C	R5	5A	R27	4A	R49	4A	R71	1B	R93	4A	C15	4B	C38	2C	CN2	1A		
IC21	2A	R6	5A	R28	4B	R50	4A	R72	1B	R94	4B	C17	4B	C39	2C				
IC22	1A	R7	5B	R29	4B	R51	4A	R73	1A	R95	2A	C18	4B	C40	1D	S1	2B		
IC23	1D	R8	5B	R30	4B	R52	4A	R74	1A			C19	4B	C41	1C	S2	4C		

## 3.49 ACO (KM-BK5011) / AKO (KM-BK5015) CIRCUIT BOARD (OPTIONAL)
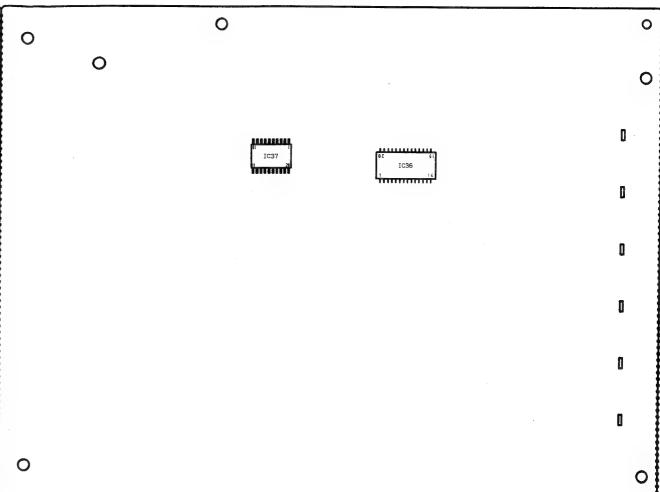
● Parts Location Table of ACO board

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	2D	IC25	4B	R3	5A	R26	3D	R49	2B	R72	2D	C1	5B	C24	3D	C48	2C	JK6	1A
IC2	2D	IC26	5B	R4	5A	R27	2D	R50	2B	R73	2D	C2	5B	C25	3A	C50	2C	JK5	1B
IC3	2D	IC27	5B	R5	5A	R28	3D	R51	1A	R74	1B	C3	4B	C26	3A	C51	2C	JK4	1B
IC4	2C	IC28	3A	R6	5A	R29	2D	R52	1C	R75	1D	C4	4B	C27	2A	C52	2D	JK3	1C
IC5	2C	IC29	3A	R7	5A	R30	2D	R53	2B	R76	2C	C5	4A	C28	2A	C54	2D	JK2	1C
IC6	2C	IC30	4A	R8	5A	R31	2D	R54	2A	R77	2C	C6	5C	C29	3B	C55	2D	JK1	1C
IC7	2B	IC31	4A	R9	4D	R32	3D	R55	2A	R78	2C	C7	5C	C30	3B	C56	2D		
IC8	3D	IC32	5A	R10	5C	R33	3D	R56	2A	R79	2C	C8	4C	C31	2B	C57	1D	S7	4D
IC9	3D	IC33	5A	R11	4C	R34	3D	R57	2A	R80	2C	C9	4C	C32	2D	C58	2B	S6	3D
IC10	4D	IC34	3B	R12	4C	R35	3D	R58	2A	R81	2C	C10	4C	C33	2D	C59	3B	S5	2A
IC11	4D	IC35	3A	R13	4C	R36	2D	R59	2A	R82	2C	C11	4B	C34	5D	C60	3B	S4	2B
IC12	4D	IC36	3A	R14	4C	R37	2D	R60	2C	R83	2C	C12	5C	C35	5D	C61	2A	S2	2D
IC13	5D	IC37	3B	R15	2A	R38	2D	R61	2C	R84	3D	C13	4C	C36	5D	C62	2A	S1	4C
IC14	3C			R16	2A	R39	3D	R62	2C	R85	3C	C14	4C	C37	5D	C63	2B	S3	2D
IC15	3C	Q1	2A	R17	1A	R40	2D	R63	1B			C15	4C	C38	5D				
IC16	3C	Q2	2A	R18	2A	R41	3D	R64	1C	VR7	2C	C16	3C	C39	3C	TP1	1D	S8	5C
IC17	4C	Q3	3B	R19	2A	R42	2D	R65	2B			C17	3C	C40	5A	TP2	5A		
IC18	4C	Q4	2D	R20	2A	R43	3D	R66	2B	VR5	2B	C18	3B	C41	6B				
IC20	5C	Q5	3D	R21	2B	R44	2D	R67	2B	VR6	2A	C19	4D	C42	2B	LC1	2A		
IC21	3B	Q6		R22	2B	R45	3D	R68	2B	VR3	2A	C20	4D	C43	2C	LC2	2A		
IC22	3B			R23	2B	R46	2D	R69	2B	VR4	2B	C21	4C	C45	2C	LC3	2B		
IC23	4B	R1	5A	R24	3D	R47	2B	R70	2B	VR1	2D	C22	4D	C46	2B				
IC24	4B	R2	5A	R25	3D	R48	2B	R71	2D	VR2	2D	C23	5C	C47	1C	CN1	5D		

3.50 AVO (KM-BK5012) CIRCUIT BOARD (OPTIONAL)

**Side A**

SCK2394-00A AVO BOARD

Side B
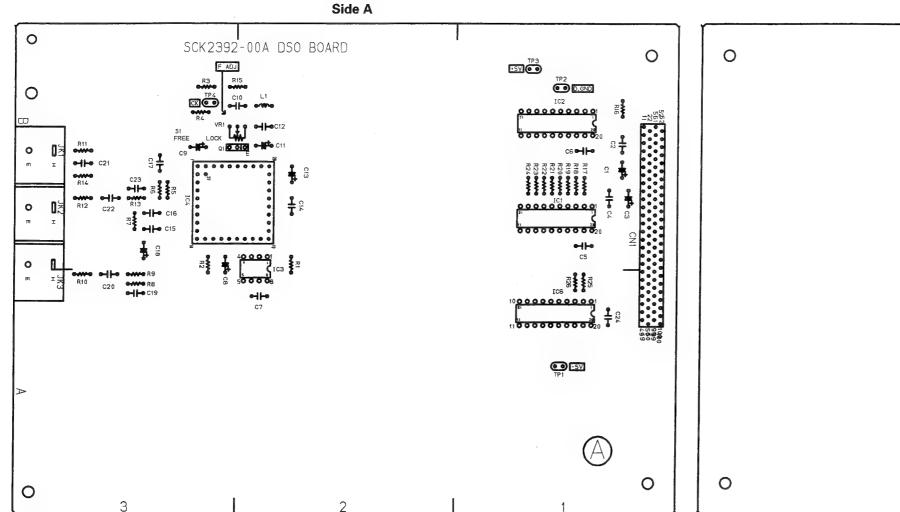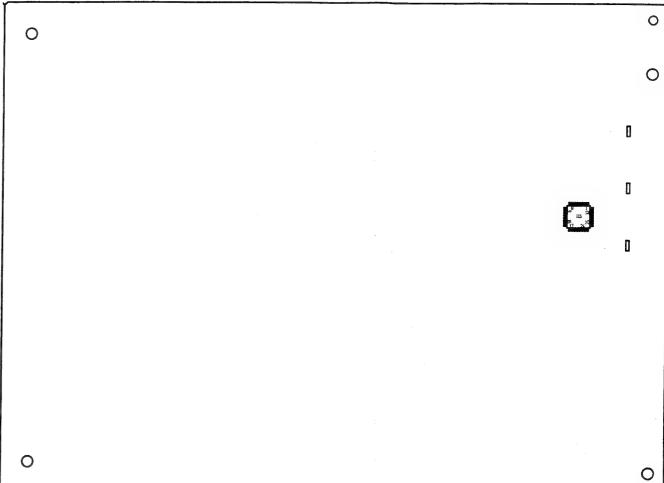
● **Parts Location Table of AVO board**

● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC1	A-3B	IC31	A-1A	R20	A-1B	R52	A-3B	C16	A-2B	C46	A-2B	C75	A-1B	LC2	A-2A
IC2	A-3B	IC32	A-1B	R21	A-2A	R53	A-3B	C17	A-2B	C47	A-2B	C76	A-2B	LC3	A-2A
IC3	A-3B	IC33	A-2B	R22	A-2A	R54	A-3B	C18	A-3B	C48	A-3B	C77	A-2B		
IC4	A-3A	IC34	A-1B	R24	A-2A	R55	A-3B	C19	A-2B	C49	A-2B	C78	A-1B	JK1	A-1B
IC5	A-3A	IC35	A-1B	R25	A-1A	R56	A-3B	C20	A-2B	C50	A-2B	C79	A-1B	JK2	A-1B
IC6	A-3A	IC36	B-2B	R26	A-1A	R57	A-1B	C21	A-2B	C51	A-2B	C80	A-1B	JK3	A-1B
IC7	A-3A	IC37	B-2B	R27	A-1B	R58	A-1A	C22	A-2B	C52	A-2B	C81	A-1A	JK4	A-1A
IC8	A-3A			R28	A-1A			C23	A-2B	C53	A-2B	C82	A-1B	JK5	A-1A
IC9	A-3A	Q1	A-3B	R29	A-1A	VR1	A-1B	C24	A-3A	C54	A-2B	C83	A-1R	JK6	A-1A
IC10	A-3A			R30	A-1A	VR2	A-1A	C25	A-3A	C55	A-2B	C84	A-2B		
IC11	A-3B	R59	A-1A	R31	A-1A	VR3	A-1A	C26	A-3A	C56	A-2B	C85	A-2B	S2	A-2A
IC12	A-3B	R1	A-3B	R32	A-1A	VR4	A-1B	C27	A-3A	C57	A-3B	C86	A-1B		
IC13	A-3A	R2	A-3B	R33	A-1A	VR5	A-1A	C28	A-3B	C58	A-3B	C87	A-1A	CN1	A-4B
IC14	A-3A	R3	A-2B	R34	A-2A	VR6	A-1A	C29	A-3A	C59	A-3B	C88	A-1A		
IC15	A-3A	R4	A-2B	R35	A-2A			C30	A-3A	C60	A-3B	C89	A-1A	X1	A-2B
IC16	A-2A	R4	A-2B	R37	A-2A	C1	A-3A	C31	A-3A	C61	A-3B	C90	A-1A		
IC17	A-2A	R5	A-2B	R38	A-1A	C2	A-3B	C32	A-3A	C62	A-2A	C91	A-1A		
IC18	A-2A	R6	A-3B	R39	A-1A	C3	A-3B	C33	A-3A	C63	A-3B	C92	A-3B		
IC19	A-2A	R7	A-2B	R40	A-1A	C4	A-3B	C34	A-3A	C64	A-2A	C93	A-2B		
IC20	A-2A	R8	A-2B	R41	A-1A	C5	A-3B	C35	A-3A	C95	A-2B	C94	A-2B		
IC21	A-2A	R9	A-2B	R42	A-1A	C6	A-2A	C36	A-2A	C65	A-2B	L1	A-2B		
IC22	A-2A	R11	A-1B	R43	A-1A	C7	A-2A	C37	A-2A	C66	A-1B	L2	A-2B		
IC23	A-3B	R12	A-1B	R44	A-1A	C8	A-3B	C38	A-2A	C67	A-1B	L3	A-2B		
IC24	A-2A	R13	A-1B	R45	A-1A	C9	A-3B	C39	A-2A	C68	A-1B				
IC25	A-3B	R14	A-1B	R46	A-1A	C10	A-3B	C40	A-3B	C69	A-1B	TP1	A-2A		
IC26	A-2B	R15	A-1B	R47	A-2B	C11	A-2B	C41	A-2A	C70	A-1B	TP2	A-2B		
IC27	A-2B	R16	A-1B	R48	A-2B	C12	A-2B	C42	A-2A	C71	A-1B				
IC28	A-3B	R17	A-1B	R49	A-3B	C13	A-2A	C43	A-2B	C72	A-3B	S1	A-2A		
IC29	A-1B	R18	A-1B	R50	A-3B	C14	A-2B	C44	A-2A	C73	A-2B				
IC30	A-1A	R19	A-1B	R51	A-3B	C15	A-2B	C45	A-2B	C74	A-1B	LC1	A-2B		

3-76   3-76

3.51 DSO (KM-BK5013) CIRCUIT BOARD (OPTIONAL)
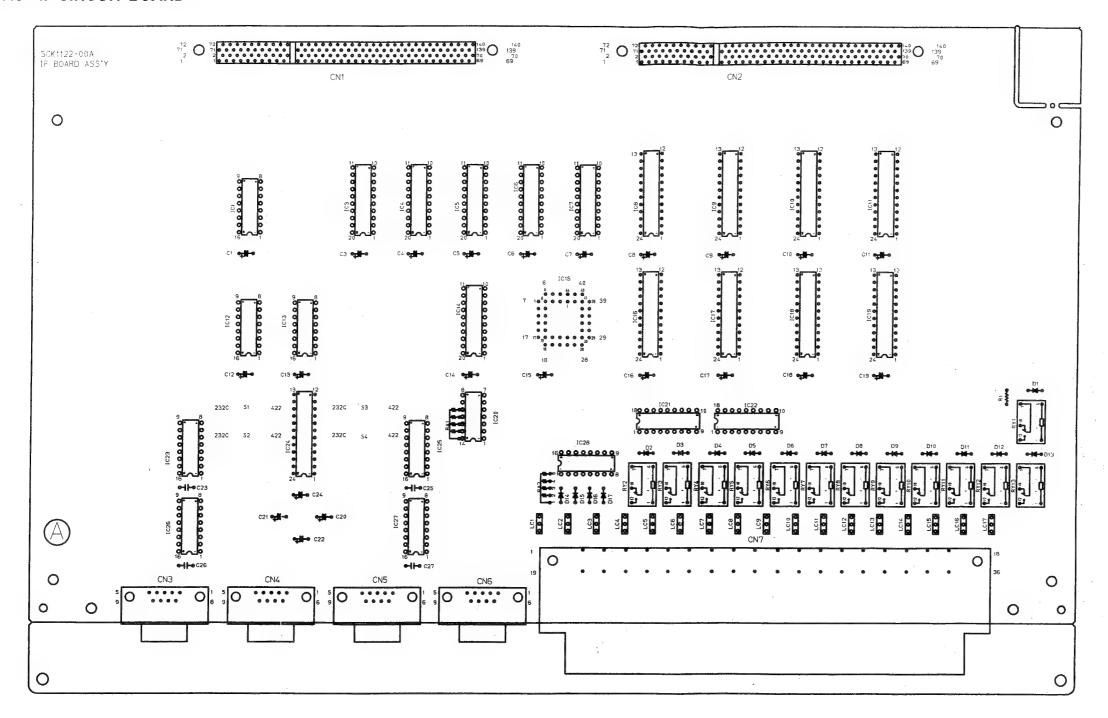
Side A

Side B

SCK2392-00A DSO BOARD
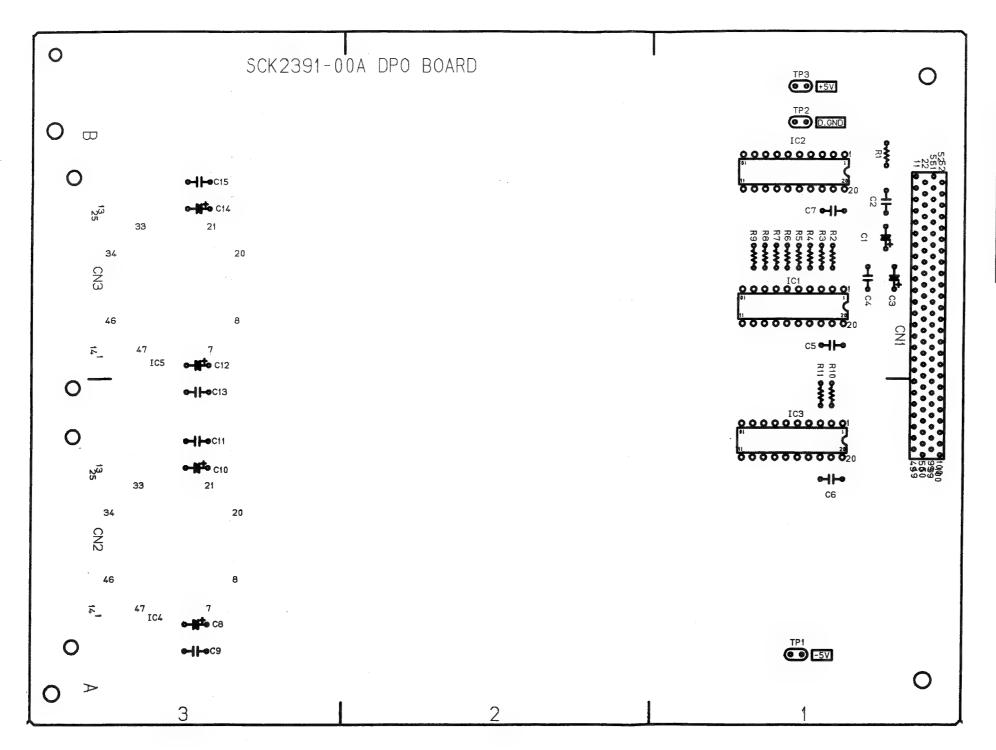
●**Parts Location Table of DSO board**
  ●Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.

IC5	B-3B	R16	A-1B	C12	A-2B	JK1	A-3B
		R17	A-1B	C13	A-2B	JK2	A-3B
IC1	A-1B	R18	A-1B	C14	A-2B	JK3	A-3B
IC2	A-1B	R19	A-1B	C15	A-3B		
IC3	A-2B	R20	A-1B	C16	A-3B		
IC4	A-2B	R21	A-1B	C17	A-3B		
IC6	A-1A	R22	A-1B	C18	A-3B		
		R23	A-1B	C19	A-3A		
Q1	A-2B	R24	A-1B	C20	A-3A		
		R25	A-1A	C21	A-3B		
R1	A-2A	R26	A-1A	C22	A-3B		
R2	A-2A			C23	A-3B		
R3	A-2B	VR1	A-2B	C24	A-1A		
R4	A-2B						
R5	A-3B	C1	A-1B	L1	A-2B		
R6	A-3B	C2	A-1B				
R7	A-3B	C3	A-1B	TP1	A-1A		
R8	A-3A	C4	A-1B	TP2	A-1B		
R9	A-3A	C5	A-1B	TP3	A-1B		
R10	A-3A	C6	A-1B	TP4	A-2B		
R11	A-3B	C7	A-2A				
R12	A-3B	C8	A-2A	S1	A-2B		
R13	A-3B	C9	A-2B				
R14	A-3B	C10	A-2B	CN1	A-1B		
R15	A-2B	C11	A-2B				

SCK2391-00A DPO BOARD

TP3
●● +5V

TP2
●● D.GND

TP1
●● -5V
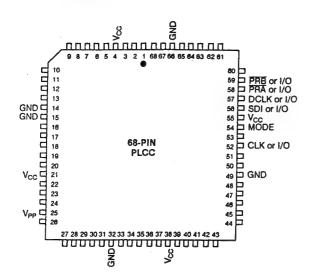
● Parts Location Table of DPO board
● Code which consists of numeral and alphabet and written on the right side of symbol number indicates parts location in the circuit diagram. Each indication may make an error by one section.
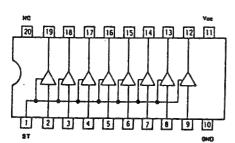
IC1	1B	C3	1B	CN2	3A
IC2	1B	C4	1B	CN3	3B
IC3	1A	C5	1B		
IC4	3A	C6	1A		
IC5	3B	C7	1B		
		C8	3A		
R1	1B	C9	3A		
R2	1B	C10	3A		
R3	1B	C11	3A		
R4	1B	C12	3B		
R5	1B	C13	3A		
R6	1B	C14	3B		
R7	1B	C15	3B		
R8	1B				
R9	1B	TP2	1B		
R10	1A				
R11	1A	TP1	1A		
		TP3	1B		
C1	1B				
C2	1B	CN1	1B		

JVC-04150 / Druck 82
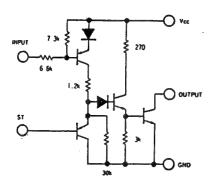
3.53 BLOCK DIAGRAMS OF PRINCIPLE ICs

■ A1010B-68-0001 【MATSUSHITA】
(Field Programable Gate Array)

68-PIN PLCC
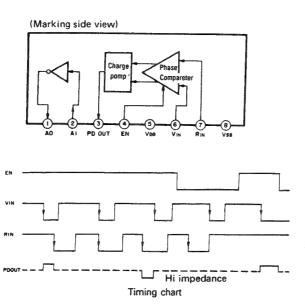
■ A1020B-68-0001 【MATSUSHITA】
(Refer to A1010B-68-0001.)

■ A1020B-68-0004 【MATSUSHITA】
(Refer to A1010B-68-0001.)

■ A1020B168-0001 【MATSUSHITA】
(Refer to A1010B-68-0001.)

■ BA6212 【ROHM】
(7 Seg driver)
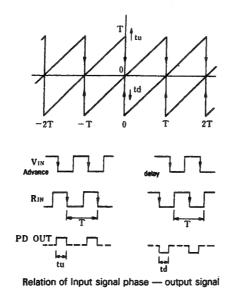
■ CX23065A 【SONY】
(Phase Comparator)

(Marking side view)

Timing chart
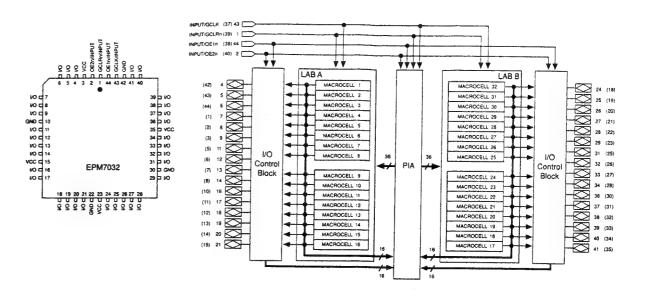
Pin No.	Name	Description
1	AO	Output terminal of Amplifier
2	AI	Input terminal of Amplifier
3	PD OUT	Phase Compraretion output (3 state)
4	EN	Input Control (High active)
5	VDD	+5V
6	VIN	Signal Input (Max. Freg. 14MHz)
7	RIN	Signal Input (Max. Freg. 14MHz)
8	Vss	GND

PD OUT Signal	Input Control EN	Input Signal RIN, VIN
High level	High level	VIN is in phase advance of RIN
Low level	High level	VIN is behind RIN in phase
High Impedance level	High level	VIN and RIN are in-phase
	Low level	
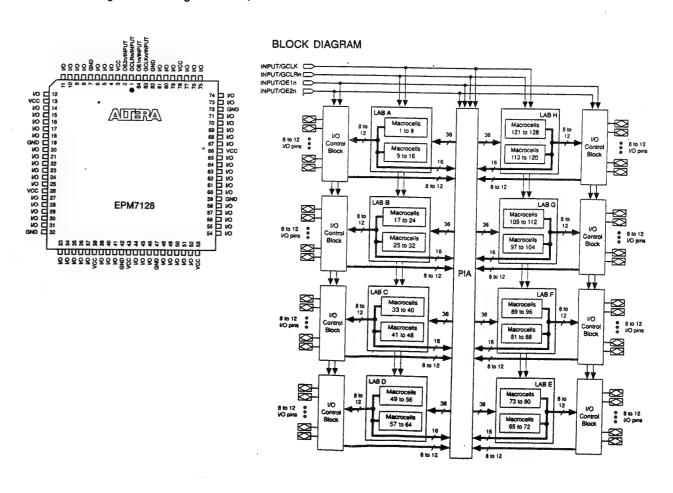
Phase difference of input signal and characteristic of output signal are in the relation as shown in the right figure, namely, output signal has sawtooth waveform that signal phase and freqency are easily comparable.

Relation of Input signal phase — output signal
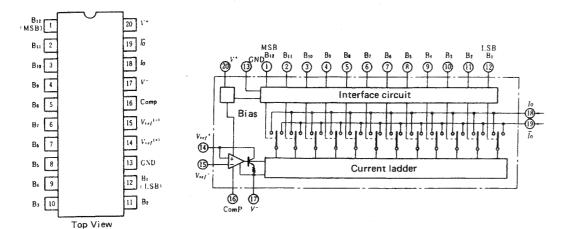
■ EPM032-15-**** 【ALTERA】
(Erasable Programmable Logic Devices)

EPM7032
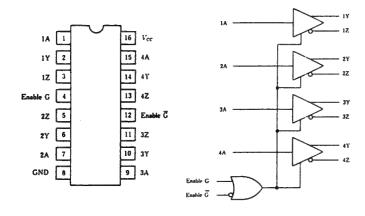
■ EPM128-20-**** 【ALTERA】
(Erasable Programmable Logic Devices)

BLOCK DIAGRAM

EPM7128
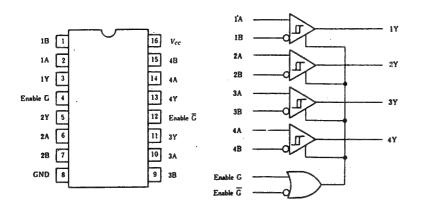
HA17012PC 【HITACHI】
(12 Bit Maltiplying D/A Converter)

Top View
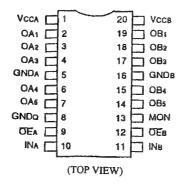
HD26LS31P 【HITACHI】
(Quadruple Differential Line Drivers
(3-state output))

HD26LS32P 【HITACHI】
(Quadruple Differential Line Receivers
(3-state output))
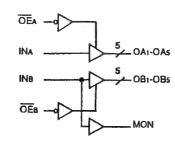
IDT49FCT805P 【INTEGRATED DEVICE TECHNOLOGY】
(Buffer/Clock Driver)

(TOP VIEW)

PIN DESCRIPTION

Pin Names	Description
$\overline{OE}_A$, $\overline{OE}_B$	3-State Output Enable Inputs
IN$_A$, IN$_B$	Clock Inputs
OA$_n$, OB$_n$	Clock Outputs
MON	Monitor Output

BLOCK DIAGRAM

TRUTH TABLE
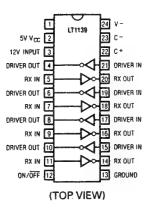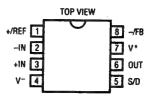
Inputs			Outputs	
$\overline{OE}_A$, $\overline{OE}_B$	IN$_A$, IN$_B$	OA$_n$, OB$_n$	MON	
L	L	L	L	
L	H	H	H	
H	L	Z	L	
H	H	Z	H	

NOTE:
1. H = HIGH, L = LOW, Z = High Impedance
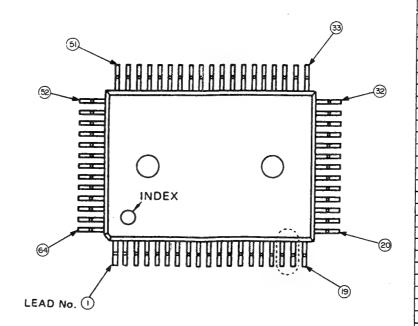
LT1139CN 【LINEAR TECHNOLOGY】
(Advanced Low Power 5V RS232 Driver/
Receivers With Charge Pump)

(TOP VIEW)

LT1193CN8 【LINEAR TECHNOLOGY】
(Video Difference Amplifier Adjustable
Gain)
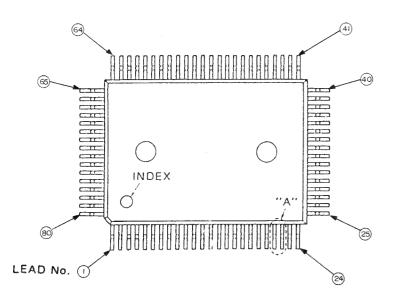
JCS0019 【FUJITSU】
(Border Chip)

LEAD No. ①
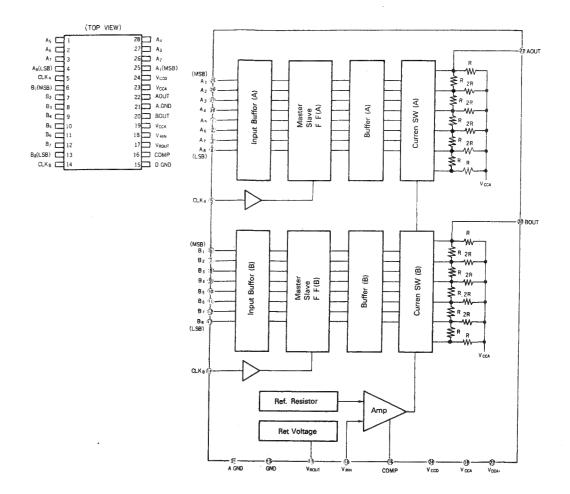
NO.	I/O	PIN NAME	BUF.NAME	NO.	I/O	PIN NAME	BUF.NAME
1	I	A_3	I2C	2	I	A_2	I2C
3	I	A_1	I2C	4	I	A_0	I2C
5	I	B_3	I2C	6	I	B_2	I2C
7	I	B_1	I2C	8	I	B_0	I2C
9	-	NC		10	-	VSS	
11	I	C_3	I2C	12	I	C_2	I2C
13	I	C_1	I2C	14	I	C_0	I2C
15	I	D_Q	I2C	16	I	B_S	I2C
17	I	D_3	I2C	18	I	D_2	I2C
19	I	D_1	I2C	20	I	D_0	I2C
21	I	E_3	I2C	22	I	E_2	I2C
23	I	E_1	I2C	24	I	E_0	I2C
25	-	VSS		26	-	VDD	
27	I	VP_3	I2C	28	I	VP_2	I2C
29	I	VP_1	I2C	30	I	VP_0	I2C
31	I	WC1	I2C	32	I	WC0	I2C
33	I	HP_3	I2C	34	I	HP_2	I2C
35	I	HP_1	I2C	36	I	HP_0	I2C
37	-	NC		38	O	NRW_0	O2P
39	O	NRW_1	O2P	40	O	NRW_2	O2P
41	O	NRW_3	O2P	42	-	VSS	
43	O	WIDE_0	O2P	44	O	WIDE_1	O2P
45	O	WIDE_2	O2P	46	O	WIDE_3	O2P
47	I	EXT	I2C	48	I	OUTL	I2C
49	I	EX_3	I2C	50	I	EX_2	I2C
51	I	EX_1	I2C	52	I	EX_0	I2C
53	-	NC		54	I	STBP	I2C
55	I	STBM	I2C	56	-	NC	
57	-	VSS		58	-	VDD	
59	I	CLR	ILB	60	-	NC	
61	I	CK	ILB	62	-	NC	
63	O	MRS	O2P	64	I	HDIN	I2C

JCS0024 【FUJITSU】
(D1 Encoder)

INDEX
"A"
LEAD No. ①

LT1228CS8 【LINEAR TECHNOLOGY】
(100 MHz Current Feedback Amplifier With DC Gain Control)

TOP VIEW

I_OUT	1		8	GAIN
-IN	2	g_m	7	V+
+IN	3		6	V_OUT
V-	4		5	I_SET

MB40568PF-G 【FUJITSU】
(8 Bit A/D Converter)

BLOCK DIAGRAM

(TOP-VIEW)
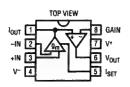
NO.	I/O	PIN NAME	BUF.NAME	NO.	I/O	PIN NAME	BUF.NAME
1	-	NC		2	-	VSS	
3	I	Y_9	I2C	4	I	Y_8	I2C
5	I	Y_7	I2C	6	I	Y_6	I2C
7	I	Y_5	I2C	8	I	Y_4	I2C
9	I	Y_3	I2C	10	I	Y_2	I2C
11	I	Y_1	I2C	12	-	VSS	
13	I	Y_0	I2C	14	I	RY_9	I2C
15	I	RY_8	I2C	16	I	RY_7	I2C
17	I	RY_6	I2C	18	I	RY_5	I2C
19	I	RY_4	I2C	20	I	RY_3	I2C
21	I	RY_2	I2C	22	I	RY_1	I2C
23	-	VSS		24	I	RY_0	I2C
25	I	BY_9	I2C	26	I	BY_8	I2C
27	I	BY_7	I2C	28	I	BY_6	I2C
29	I	BY_5	I2C	30	I	BY_4	I2C
31	I	BY_3	I2C	32	I	BY_2	I2C
33	-	VDD		34	I	XSM	TI2CU
35	I	XTST	TI2CU	36	I	SDI	TI2CU
37	O	SDO	TO2R	38	I	BY_1	I2C
39	I	BY_0	I2C	40	I	CK	ILB
41	-	NC		42	-	VSS	
43	O	CKC	O2P	44	O	CKY	O2P
45	O	CKO	O2P	46	-	NC	
47	O	FIP	O2P	48	-	NC	
49	O	HD	O2P	50	-	NC	
51	O	CP	O2P	52	-	VSS	
53	O	OUT_9	O2P	54	O	OUT_8	O2P
55	O	OUT_7	O2P	56	O	OUT_6	O2P
57	O	OUT_5	O2P	58	O	OUT_4	O2P
59	O	OUT_3	O2P	60	O	OUT_2	O2P
61	O	OUT_1	O2P	62	O	OUT_0	O2P
63	-	VSS		64	-	NC	
65	I	HDL_5	I2C	66	I	HDL_4	I2C
67	I	HDL_3	I2C	68	I	HDL_2	I2C
69	I	HDL_1	I2C	70	I	HDL_0	I2C
71	I	TESTH	I2C	72	I	TESTV	I2C
73	-	VDD		74	I	YDL_2	I2CZ
75	I	YDL_1	I2CZ	76	I	YDL_0	I2CZ
77	I	BP	I2C	78	I	BR	I2C
79	I	VR	I2C	80	I	CLR	ILB
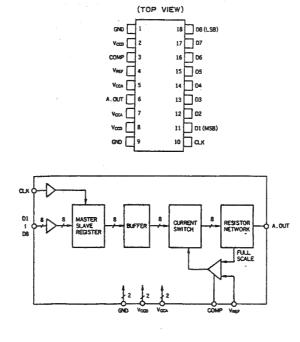
MB40968P-G-SH 【FUJITSU】
(D/A Converter)

(TOP VIEW)

MB40778P-G 【FUJITSU】
(8 bit Video D/A Converter)

(TOP VIEW)
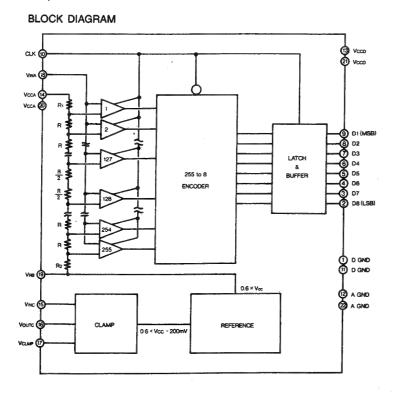
MC10116L 【MOTOROLA】
(Triple Line Receiver)

LOGIC DIAGRAM

(TOP VIEW)

V_CC1 = Pin 1
V_CC2 = Pin 16
V_EE = Pin 8

*V_BB to be used to supply bias to the MC10116 only.

■ MB86031PF–G–BN 〔FUJITSU〕
(16 Bit Multiplexer)
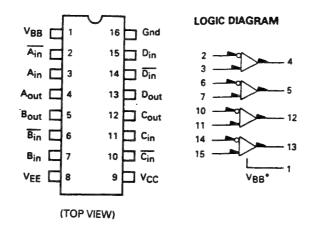
(TOP VIEW)

INDEX

Pin No.	I/O	Name	Pin No.	I/O	Name	Pin No.	I/O	Name	Pin No.	I/O	Name
1	I	A6	21	I	B6	41	O	Q25	61	O	Q9
2	I	A7	22	–	(OPEN)	42	O	Q24	62	–	(OPEN)
3	I	A8	23	–	Vss	43	O	Q23	63	–	Vss
4	I	A9	24	I	B7	44	O	Q22	64	O	Q8
5	I	A10	25	I	B8	45	O	Q21	65	O	Q7
6	I	A11	26	I	B9	46	O	Q20	66	O	Q6
7	I	A12	27	I	B10	47	O	Q19	67	O	Q5
8	I	A13	28	I	B11	48	O	Q18	68	O	Q4
9	I	A14	29	I	B12	49	O	Q17	69	O	Q3
10	I	A15	30	I	B13	50	O	Q16	70	O	Q2
11	I	CLKA	31	I	B14	51	I	CLKQ	71	O	Q1
12	–	Vss	32	I	B15	52	–	Vss	72	O	Q0
13	I	CLKB	33	–	Vss	53	–	CLR	73	–	Vss
14	I	MODE	34	O	Q31	54	I	OE	74	I	A0
15	I	B0	35	O	Q30	55	O	Q15	75	I	A1
16	I	B1	36	–	Vdd	56	O	Q14	76	–	Vdd
17	I	B2	37	O	Q29	57	O	Q13	77	I	A2
18	I	B3	38	O	Q28	58	O	Q12	78	I	A3
19	I	B4	39	O	Q27	59	O	Q11	79	I	A4
20	I	B5	40	O	Q26	60	O	Q10	80	I	A5

BLOCK DIAGRAM

A15～A0   B15～B0   CLR
CLKB
CLKA
A Register   B Register
Cell Array
MODE
CLKQ
Q Register
OE
Q31～Q0

■ MC10125L 〔MOTOROLA〕
(Quad Mecl to TTL Translator)

V_{BB}	1	16	Gnd
$\overline{A_{in}}$	2	15	D_{in}
A_{in}	3	14	$\overline{D_{in}}$
A_{out}	4	13	D_{out}
B_{out}	5	12	C_{out}
$\overline{B_{in}}$	6	11	C_{in}
B_{in}	7	10	$\overline{C_{in}}$
V_{EE}	8	9	V_{CC}

(TOP VIEW)

LOGIC DIAGRAM
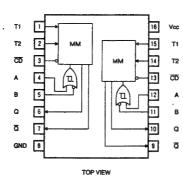
Gnd = Pin 16
V_{CC} (+5.0 Vdc) = Pin 9
V_{EE} (–5.2 Vdc) = Pin 8
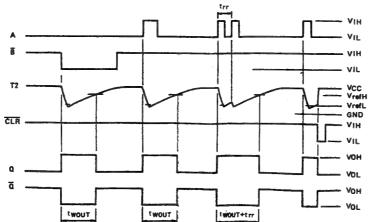
*V_{BB} to be used to supply bias to the MC10125 only and bypassed (when used) with 0.01 µF to 0.1 µF capacitor.

When the input pin with the bubble goes positive the output goes negative.
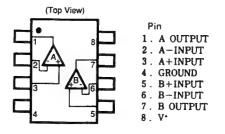
■ MC74HC4538AF 〔MOTOROLA〕
(Dual Retriggerable Monostable Multivibrator)
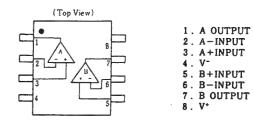
T1	1	16	Vcc
T2	2	15	T1
CD	3	14	T2
A	4	13	CD
B	5	12	A
Q	6	11	B
Q̄	7	10	Q
GND	8	9	Q̄

TOP VIEW

TRUE Table

INPUT			OUTPUT		NOTE
A	B̄	CD	Q	Q̄	
⌐	H	H	⎍	⎍	OUTPUT ENABLE
X	L	H	L	H	INHIBIT
H	X	H	L	H	INHIBIT
L	⌐	H	⎍	⎍	OUTPUT ENABLE
X	X	L	L	H	INHIBIT

X:Don't Care
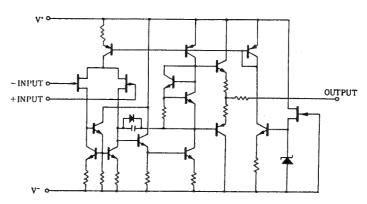
■ MC14577CP 〔MOTOROLA〕
(Dual Op.Amp)

(Top View)

Pin
1. A OUTPUT
2. A–INPUT
3. A+INPUT
4. GROUND
5. B+INPUT
6. B–INPUT
7. B OUTPUT
8. V*
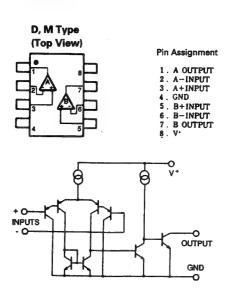
■ NJM082D 〔JRC〕
(Dual J–FET Input Op.Amp)

(Top View)

1. A OUTPUT
2. A–INPUT
3. A+INPUT
4. V–
5. B+INPUT
6. B–INPUT
7. B OUTPUT
8. V+
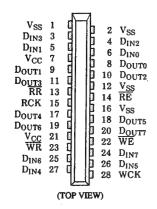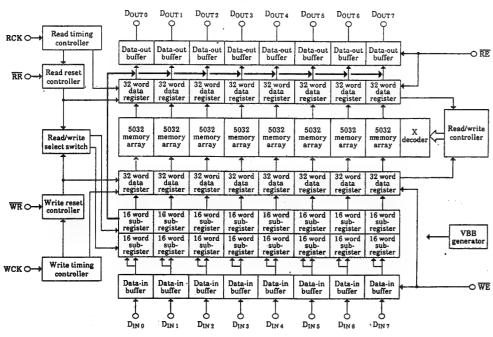
■ NJM2903D 〔JRC〕
(Dual Single Supply Comparator)

D, M Type
(Top View)

Pin Assignment
1. A OUTPUT
2. A–INPUT
3. A+INPUT
4. GND
5. B+INPUT
6. B–INPUT
7. B OUTPUT
8. V*
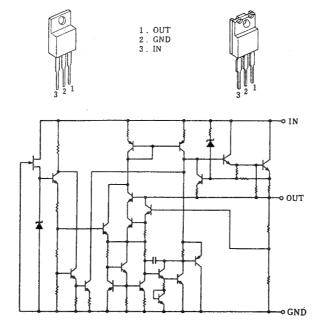
■ MSM514212-34ZS 【OKI】
(5048-Word X 8-Bit Line Memory)

WCK	Write Clock Input
$\overline{WR}$	Write Reset
$\overline{WE}$	Write Enable
D_{IN0} to D_{IN7}	Data Input
RCK	Read Clock Input
$\overline{RR}$	Read Reset
$\overline{RE}$	Read Enable
DOUT0 to DOUT7	Data Output

(TOP VIEW)
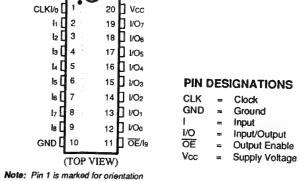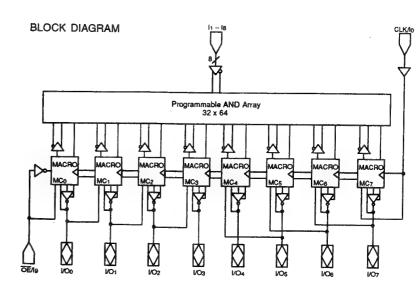
■ NJM7809FA 【JRC】
(3-Terminal Positive Voltage Regulator (+9V))

1. OUT
2. GND
3. IN
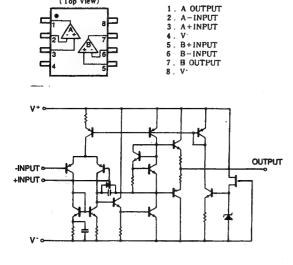
■ NJM79L09A-T3 【JRC】
(Refer to NJM79L05A.)
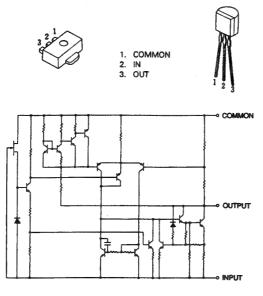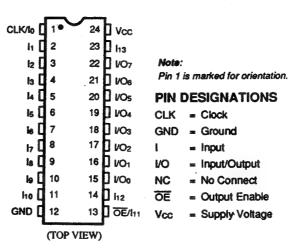
■ NJM4560DD 【JRC】
(Dual Op.Amp)

(Top View)

1. A OUTPUT
2. A - INPUT
3. A+ INPUT
4. V⁻
5. B+ INPUT
6. B - INPUT
7. B OUTPUT
8. V⁺
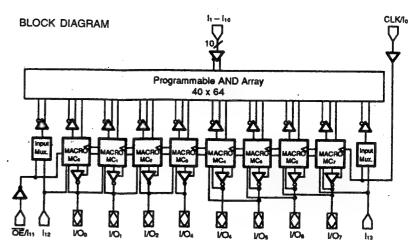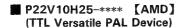
■ NJM79L05A 【JRC】
(3-Terminal Negative Voltage Regulator (-5V))

1. COMMON
2. IN
3. OUT

■ P16V8Q-15-**** 【AMD】
(EE CMOS Universal Programable Array Logic)

CLKI/o	1	20	Vcc
I1	2	19	I/O7
I2	3	18	I/O6
I3	4	17	I/O5
I4	5	16	I/O4
I5	6	15	I/O3
I6	7	14	I/O2
I7	8	13	I/O1
I8	9	12	I/O0
GND	10	11	$\overline{OE}$/I9

(TOP VIEW)

PIN DESIGNATIONS

CLK	=	Clock
GND	=	Ground
I	=	Input
I/O	=	Input/Output
$\overline{OE}$	=	Output Enable
Vcc	=	Supply Voltage

Note: Pin 1 is marked for orientation

BLOCK DIAGRAM

■ P20V8Q-15-**** 【AMD】
(EE CMOS Universal Programable Array Logic)

CLK/I0	1	24	Vcc
I1	2	23	I13
I2	3	22	I/O7
I3	4	21	I/O6
I4	5	20	I/O5
I5	6	19	I/O4
I6	7	18	I/O3
I7	8	17	I/O2
I8	9	16	I/O1
I9	10	15	I/O0
I10	11	14	I12
GND	12	13	$\overline{OE}$/I11

(TOP VIEW)

Note: Pin 1 is marked for orientation.

PIN DESIGNATIONS

CLK	=	Clock
GND	=	Ground
I	=	Input
I/O	=	Input/Output
NC	=	No Connect
$\overline{OE}$	=	Output Enable
Vcc	=	Supply Voltage

BLOCK DIAGRAM

■ P22V10H25-**** 【AMD】
(TTL Versatile PAL Device)

```
CLK/I0  [ 1●    24 ]  Vcc
   I1   [ 2     23 ]  I/O9
   I2   [ 3     22 ]  I/O8
   I3   [ 4     21 ]  I/O7
   I4   [ 5     20 ]  I/O6
   I5   [ 6     19 ]  I/O5
   I6   [ 7     18 ]  I/O4
   I7   [ 8     17 ]  I/O3
   I8   [ 9     16 ]  I/O2
   I9   [ 10    15 ]  I/O1
   I10  [ 11    14 ]  I/O0
   GND  [ 12    13 ]  I11
```
(TOP VIEW)

Note:
Pin 1 is marked for orientation.

PIN DESIGNATIONS

CLK	=	Clock
GND	=	Ground
I	=	Input
I/O	=	Input/Output
NC	=	No Connect
Vcc	=	Supply Voltage

BLOCK DIAGRAM

16559B-1

■ PLSC1090 【FUJITSU】
(512K Byte one time P-ROM)

(TOP VIEW)

```
A15 [ 1    28 ]  Vcc
A12 [ 2    27 ]  A14
 A7 [ 3    26 ]  A13
 A6 [ 4    25 ]  A8
 A5 [ 5    24 ]  A9
 A4 [ 6    23 ]  A11
 A3 [ 7    22 ]  OE/Vpp
 A2 [ 8    21 ]  A10
 A1 [ 9    20 ]  CE
 A0 [ 10   19 ]  O8
 O1 [ 11   18 ]  O7
 O2 [ 12   17 ]  O6
 O3 [ 13   16 ]  O5
GND [ 14   15 ]  O4
```


■ PLSC1091 【FUJITSU】
(Refer to PLSC1090.)

■ PLSC1099 【FUJITSU】
(Refer to PLSC1090.)

■ SAA7151BWP 【PHILIPS】
(Digital Mutistandard Color Decoder
With SCART Interface)

SAA7151B

PINNING
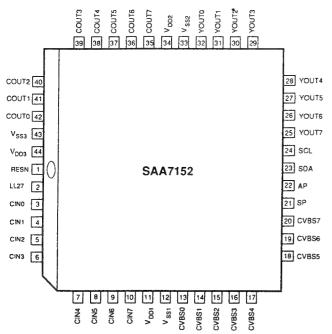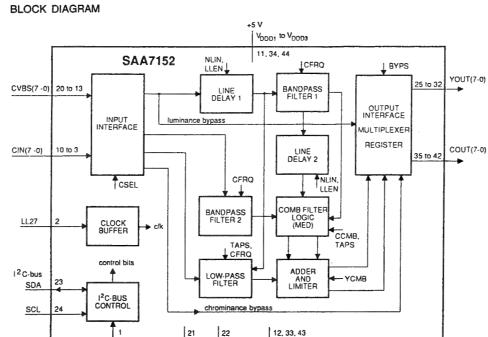
SYMBOL	PIN	DESCRIPTION
SP	1	connected to ground (shift pin for testing)
AP	2	connected to ground (action pin for testing)
RESN	3	reset, active-LOW
CREF	4	clock reference, sync from external to ensure in-phase signals on the Y-, CUV- and YUV-bus
VDD1	5	+5 V supply input 1
CUV0	6	
CUV1	7	
CUV2	8	
CUV3	9	chrominance input data bits CUV7 to CUV0 (digitalized time-multiplexed signals in two's
CUV4	10	complement format from a S-Video source (VHS, Hi8) or a chrominance /colour-difference source
CUV5	11	
CUV6	12	
CUV7	13	
CVBS0	14	
CVBS1	15	CVBS lower input data bits CVBS3 to CVBS0
CVBS2	16	(CVBS with luminance, chrominance and all sync information in two's complement format)
CVBS3	17	
VDD2	18	+5 V supply input 2
VSS1	19	ground 1 (0 V)
CVBS4	20	
CVBS5	21	CVBS upper input data bits CVBS7 to CVBS4
CVBS6	22	(CVBS with luminance, chrominance and all sync information in two's complement format)
CVBS7	23	
GPSW1	24	status bit output FSST0 or port 1 output for general purpose (programmable by subaddress 0C)
GPSW2	25	status bit output FSST1 or port 2 output for general purpose (programmable by subaddress 0C)
HCL	26	black level clamp pulse output (begin and stop programmable), e.g. for TDA8708 (ADC)
LL27	27	line-locked system clock output signal (27 MHz)
VDD3	28	+5 V supply input 3
HSY	29	horizontal sync pulse output (begin and stop programmable), e.g. for TDA8708 (ADC)
VS	30	vertical sync output signal (Fig.10)
HS	31	horizontal sync output signal (Fig.14; start point programmable)
RTCO	32	real time control output; serial increments of HPLL and FSCPLL and status PAL or SECAM sequence (Fig.9)
XTAL	33	24.576 MHz clock output (open-circuit for use with external oscillator)
XTALI	34	24.576 MHz connection for crystal or external oscillator (TTL compatible squarewave)

SYMBOL	PIN	DESCRIPTION
VSSA	35	analog ground
LFCO	36	line frequency control output signal, multiple of horizontal frequency (nominal 6.75 MHz)
VDDA	37	+5 V supply input for analog part
VSS2	38	ground 2 (0 V)
ODD	39	odd/even field identification output (odd = HIGH)
SDA	40	I²C-bus data line
SCL	41	I²C-bus clock line
HREF	42	horizontal reference for YUV data outputs (for active line 720Y samples long)
IICSA	43	set module address input of I²C-bus (LOW = 1000 101X; HIGH = 1000 111X)
CPI	44	clamping pulse input (digital clamping of external UV signals)
Y7	45	
Y6	46	
Y5	47	Y signal output bits Y7 to Y2 (luminance), part of the digital YUV-bus
Y4	48	
Y3	49	
Y2	50	
VSS3	51	ground 3 (0 V)
VDD4	52	+5 V supply input 4
Y1	53	Y signal output bits Y1 to Y0 (luminance), part of the digital YUV-bus
Y0	54	
UV7	55	
UV6	56	
UV5	57	
UV4	58	UV signal output bits UV7 to UV0, part of the digital YUV-bus
UV3	59	
UV2	60	
UV1	61	
UV0	62	
GPSW0	63	port output for general purpose (programmable by subaddress 0D)
FEIN	64	fast enable input (active-LOW to control fast switching due to YUV data; HIGH = YUV high-Z
MUXC	65	multiplexer control output; source select signal for external ADC (UV signal multiplexing)
FSO	66	fast switch and sync insertion output; gated FS signal from FSI or sync insertion pulse in full screen RGB mode
VSS4	67	ground 4 (0 V)
FSI	68	fast switch input signal fed from SCART/peri-TV connector (indicates fast insertion of RGB signals)

JVC-04150 / Druck 88

■ SAA7152WP 〔PHILIPS〕
(Digital Video Comb Filter)

BLOCK DIAGRAM

SAA7152 Pin Description
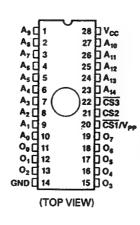
SYMBOL	PIN	DESCRIPTION
RESN	1	reset input; active-LOW
LL27	2	line-locked system clock input (27 MHz)
CIN0	3	
CIN1	4	
CIN2	5	
CIN3	6	
CIN4	7	chrominance input data bits CIN0 to CIN7
CIN5	8	
CIN6	9	
CIN7	10	
V_DD1	11	+5 V supply input 1
V_SS1	12	ground 1 (0 V)
CVBS0	13	
CVBS1	14	
CVBS2	15	
CVBS3	16	
CVBS4	17	CVBS input data bits 0 to 7
CVBS5	18	
CVBS6	19	
CVBS7	20	
SP	21	connected to ground (shift pin for testing)
AP	22	connected to ground (action pin for testing)
SDA	23	I2C-bus data line
SCL	24	I2C-bus clock line
YOUT7	25	
YOUT6	26	
YOUT5	27	
YOUT4	28	
YOUT3	29	luminance (Y) output data bits 7 to 0
YOUT2	30	
YOUT1	31	
YOUT0	32	
V_SS2	33	ground 2 (0 V)
V_DD2	34	+5 V supply input 2
COUT7	35	
COUT6	36	
COUT5	37	
COUT4	38	
COUT3	39	chrominance (C) output data bits 7 to 0
COUT2	40	
COUT1	41	
COUT0	42	
V_SS3	43	ground 3 (0 V)
V_DD3	44	+5 V supply input 3

■ SAA7157T 〔PHILIPS〕
(Clock Signal Generator Circuit For Digital TV System)

(TOP VIEW)

PINNING

SYMBOL	PIN	DESCRIPTION
MS	1	mode select input (LOW = PLL mode)
CE	2	chip enable /reset (HIGH = outputs enabled)
PORD	3	power-on reset delay, dependent on external capacitor
V_SSA	4	analog ground (0 V)
V_DDA	5	analog supply voltage (+5 V)
V_SSD1	6	digital ground 1 (0 V)
LL1.5A	7	line-locked clock output signal 1.5A (4 times f_LFCO)
V_DDD1	8	digital supply voltage 1 (+5 V)
V_SSD2	9	digital ground 2 (0 V)
LL1.5B	10	line-locked clock output signal 1.5B (4 times f_LFCO)
LFCO	11	line-locked frequency control input signal 1
RESN	12	reset output (active-LOW, Fig.4)
V_SSD3	13	digital ground 3 (0 V)
LL3A	14	line-locked clock output signal 3A (2 times f_LFCO)
CREF	15	clock reference output, qualifier signal (2 times f_LFCO)
LFCOSEL	16	LFCO source select (LOW = LFCO selected)*
V_DDD2	17	digital supply voltage 2 (+5 V)
V_SSD4	18	digital ground 4 (0 V)
LFCO2	19	line-locked frequency control input signal 2*
LL3B	20	line-locked clock output signal 3B (2 times f_LFCO)

SAA7157

■ SCV2424-001 〔JVC〕
(32K × 8 CMOS PROM/RPROM)

(TOP VIEW)

MODE SELECTION
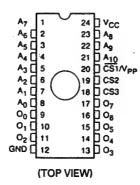
MODE \ PINS	CS1/V_PP	CS2	CS3	V_CC	OUTPUTS
Read	V_IL	V_IH	V_IL	V_CC	D_OUT
Output Disable	V_IH	X	X	V_CC	High Z
Output Disable	X	V_IL	X	V_CC	High Z
Output Disable	X	X	V_IH	V_CC	High Z
Program	V_PP	X	V_IH	V_CC	D_IN
Program Verify	V_IL	V_IH	V_IL	V_CC	D_OUT
Program Inhibit	V_PP	X	V_IL	V_CC	High Z
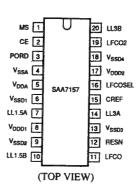
■ SCV2427-001 〔JVC〕
(2K × 8 CMOS PROM/RPROM)

(TOP VIEW)

MODE SELECTION

MODE \ PINS	CS1/V_PP	CS2	CS3	V_CC	OUTPUTS
Read	V_IL	V_IH	V_IH	V_CC	D_OUT
Output Disable	V_IH	X	X	V_CC	High Z
Output Disable	X	V_IL	X	V_CC	High Z
Program	V_PP	X	X	V_CC	D_IN
Program Verify	V_IL	V_IH	V_IH	V_CC	D_OUT
Output Disable	X	X	V_IL	V_CC	High Z

■ SCV2431-001 〔JVC〕
(8K × 8 CMOS PROM/RPROM)

(TOP VIEW)

MODE \ PINS	CS1/V_PP	V_CC	OUTPUTS
Read	V_IL	V_CC	D_OUT
Output Disable	V_IH	V_CC	High Z
Program	V_PP	V_CC	D_IN
Program Verify	V_IL	V_CC	D_OUT

3-85 3-85

■ SAA7199BWP 【PHILIPS】
(Digital Video Encoder, GENLOCK-Capable)

SAA7199B pin diagram

PINNING

SYMBOL	PIN	DESCRIPTION
V_{SSD1}	1	digital ground 1 (0 V)
V_{DDD1}	2	+5 V digital supply 1
VSN	3	vertical sync output (3-state), conditionally composite sync output; active LOW or active HIGH
PD1(0)	4	
PD1(1)	5	
PD1(2)	6	
PD1(3)	7	data 1 input: digital signal R (red) respectively V signal (formats in Table 6)
PD1(4)	8	
PD1(5)	9	
PD1(6)	10	
PD1(7)	11	
PD2(0)	12	
PD2(1)	13	
PD2(2)	14	
PD2(3)	15	data 2 input: digital signal G (green) respectively Y signal or indexed colour data
PD2(4)	16	(formats in Table 6)
PD2(5)	17	
PD2(6)	18	
PD2(7)	19	
LDV	20	load data clock input signal to input interface (samples PDn(7-0), CBN, MPK, KEY and RTCI)
V_{DDD2}	21	+5 digital supply 2
V_{SSD2}	22	digital ground 2 (0 V)
CBN	23	composite blanking input; active LOW
PD3(0)	24	
PD3(1)	25	
PD3(2)	26	
PD3(3)	27	data 3 input: digital signal B (blue) respectively U signal (formats in Table 6)
PD3(4)	28	
PD3(5)	29	
PD3(6)	30	
PD3(7)	31	
MPK	32	multi-purpose key; active HIGH
A0	33	subaddress bit A0 for microcomputer access (Table 3)
A1	34	subaddress bit A1 for microcomputer access (Table 3)
R/WN	35	read/ write not input signal from microcontroller
CSN	36	chip select input for parallel interface; active LOW
D0	37	
D1	38	bidirectional port from/to microcontroller (bits D3 to D0)
D2	39	
D3	40	

SYMBOL	PIN	DESCRIPTION
V_{DDD3}	41	+5 V digital supply 3
V_{SSD3}	42	digital ground 3
D4	43	
D5	44	bidirectional port from/to microcontroller (bits D7 to D4)
D6	45	
D7	46	
SDA	47	I²C-bus data line
SCL	48	I²C-bus clock line
CLKIN	49	external clock signal input (maximum 60 MHz)
CLKSEL	50	clock source select input
PIXCLK	51	CLKO/2 or conditionally CLKO output signal
CLKO	52	selected clock output signal (LLC or CLKIN)
TP	53	connect to ground (test pin)
RESN	54	reset input; active LOW
LLC	55	line-locked clock input signal from external CGC
CREF	56	clock qualifier of external CGC
GPSW / RTCI	57	general purpose switch output (set via I²C-bus or MPU-bus); real-time control input, defined by I²C or MPU programming
SLT	58	GENLOCK flag (3-state): HIGH = sync lost in GENLOCK mode; LOW = otherwise
XTALI	59	crystal oscillator input (26.8 or 24.576 MHz)
XTAL	60	crystal oscillator output
LFCO	61	line frequency control output signal for external CGC
$V_{ref L}$	62	reference LOW voltage of DACs (resistor chains)
$V_{ref H}$	63	reference HIGH voltage of DACs (resistor chains)
V_{DDA4}	64	+5 V analog supply 4 for resistor chains of the DACs
C	65	chrominance analog output signal C
V_{DDA1}	66	+5 V analog supply 1 for output buffer amplifier of DAC1
Y	67	luminance analog output signal Y
V_{SSA}	68	analog ground (0 V)
CVBS	69	CVBS analog output signal
V_{DDA2}	70	+5 V analog supply 2 for output buffer amplifier of DAC2
CUR	71	current input for analog output buffers
V_{DDA3}	72	+5 V analog supply 3 for output buffer amplifier of DAC3
KEY	73	key signal to insert CVBS input signal into encoded CVBS output signal; active HIGH
HSY	74	horizontal sync indicator output signal; active HIGH (3-state output to ADC)
HCL	75	horizontal clamping output; active HIGH (3-state output)
CVBS0	76	
CVBS1	77	
CVBS2	78	
CVBS3	79	digital CVBS input signal
CVBS4	80	
CVBS5	81	
CVBS6	82	
CVBS7	83	
HSN	84	horizontal sync output; active LOW or active HIGH for 64 x PIXCLK (3-state output)

■ SCV2426-001 【JVC】
(Refer to SCV2424-001.)

■ SCV2425-001 【JVC】
(Refer to SCV2424-001.)

■ SCV2432-001 【JVC】
(Refer to SCV2431-001.)

■ SCV2449-001 【JVC】
(Refer to SCV2427-001.)

■ SCV2450-001 【JVC】
(Refer to SCV2427-001.)

■ SCV2464-001 【JVC】
(Refer to SCV2427-001.)

■ SN74ABT574NSEL 【TEXAS】
(Refer to SN74ABT574N.)

SAA7199B block diagram

(1) RGB respectively input formats
YUV and indexed colour (Tables 10 to 17)

■ SN74ABT574N 【TEXAS】
(Octal D-Type EDGE-Trigger Flip-Flop
With NON Inverted 3-State Outputs)


```
OE   1       20  Vcc
D0   2       19  Q0
D1   3       18  Q1
D2   4       17  Q2
D3   5       16  Q3
D4   6       15  Q4
D5   7       14  Q5
D6   8       13  Q6
D7   9       12  Q7
GND  10      11  CK
```
(TOP VIEW)

TRUE Table

INPUTS			OUTPUTS	
OE	CK	D	Q(T574A)	Q̄(T584A)
H	X	X	Z	Z
L	⤒	X	Qn	Q̄n
L	⤒	L	L	H
L	⤒	H	H	L

X : Don't Care
Z : High Impedance
No change

■ SN74ABT821NSEL 【TEXAS】
(10 Bit Bus D-Type Flip-Flop With
3-State Output)


```
OE   1       24  Vcc
D0   2       23  Q0
D1   3       22  Q1
D2   4       21  Q2
D3   5       20  Q3
D4   6       19  Q4
D5   7       18  Q5
D6   8       17  Q6
D7   9       16  Q7
D8   10      15  Q8
D9   11      14  Q9
GND  12      13  CK
```
(TOP VIEW)

TRUTH TABLE

INPUTS			OUTPUTS
OE	CK	D	Q
H	X	X	Z
L	⤒	X	Qn
L	⤒	L	L
L	⤒	H	H
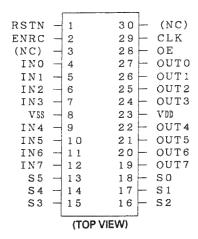
X : Don't Care
Z : Hi Impedance
Qn: Not change
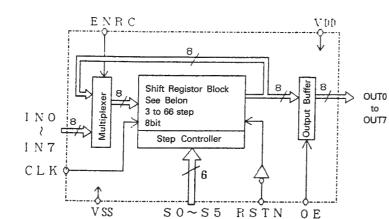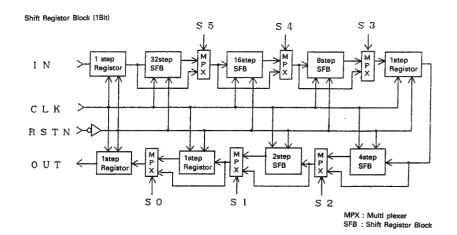
■ SM5830P 〔NIPPON PRECISION CIRCUITS〕
(Shift Register)

(TOP VIEW)

RSTN	1		30	(NC)
ENRC	2		29	CLK
(NC)	3		28	OE
IN0	4		27	OUT0
IN1	5		26	OUT1
IN2	6		25	OUT2
IN3	7		24	OUT3
VSS	8		23	VDD
IN4	9		22	OUT4
IN5	10		21	OUT5
IN6	11		20	OUT6
IN7	12		19	OUT7
S5	13		18	S0
S4	14		17	S1
S3	15		16	S2

BLOCK DIAGRAM

Shift Register Block
See Belon
3 to 66 step
8bit

Shift Register Block (1Bit)

MPX : Multi plexer
SFB : Shift Register Block

■ STV1389AQ 〔SGS–THOMSON〕
(Cable Driver For Digital Transfer)

■ STV1601A 〔SGS–THOMSON〕
(Serial Interface Transmission Encoder)

■ SN74HC244N 〔TEXAS〕
(Octal Buffers AND Line Drivers With NON–Inverted 3–State Outputs)

TC74HC244A

1G	1		20	Vcc
1A1	2		19	2G
2Y4	3		18	1Y1
1A2	4		17	2A4
2Y3	5		16	1Y2
1A3	6		15	2A3
2Y2	7		14	1Y3
1A4	8		13	2A2
2Y1	9		12	1Y4
GND	10		11	2A1

(TOP VIEW)

TRUE Table
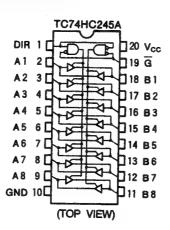
INPUTS		OUTPUTS
G	An	Yn
L	L	L
L	H	H
H	X	Z

X : Don't Care
Z : High Impedance

■ SN74HC245N 〔TEXAS〕
(Octal Bus Transceivers With NON–Inverted 3–State Outputs)

TC74HC245A

DIR	1		20	Vcc
A1	2		19	G
A2	3		18	B1
A3	4		17	B2
A4	5		16	B3
A5	6		15	B4
A6	7		14	B5
A7	8		13	B6
A8	9		12	B7
GND	10		11	B8

(TOP VIEW)

TRUE Table
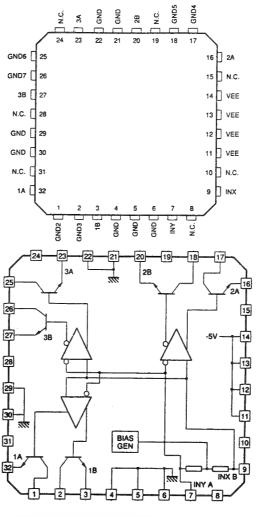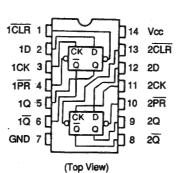
INPUT		FANCTION		OUTPUT
G	DIR	A BUS	B BUS	HC245A
L	L	OUTPUT	INPUT	A→B
L	H	INPUT	OUTPUT	B→A
H	X	HIIMPEDANCE		Z

X : Don't care
Z : Hi impedance

■ SN74HC74N 〔TEXAS〕
(Dual D–Type Positive–EDGE–Triggered Flip–Flops With Preset AND Clear)

1CLR	1		14	Vcc
1D	2		13	2CLR
1CK	3		12	2D
1PR	4		11	2CK
1Q	5		10	2PR
1Q	6		9	2Q
GND	7		8	2Q

(Top View)

TRUE Table

INPUTS				OUTPUTS		FUNCTION
CLR	PR	D	CK	Q	Q	
L	H	X	X	L	H	CLEAR
H	L	X	X	H	L	PRESET
L	L	X	X	H	H	—
H	H	L	⌐	L	H	—
H	H	H	⌐	H	L	—
H	H	X	⌐	Qn	Qn	NO CHANGE

X : Don't care

■ TA78L005AP 〔TOSHIBA〕
(3–Terminal Positive Voltage Regulator (+5V))

Schematic Diagram

OUTPUT 2
COMMON
1 INPUT

(1) INPUT
(2) OUTPUT
(3) COMMON

TA78L005AP → 5 V
TA78L012AP → 12V
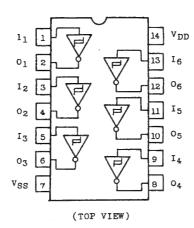
STV1602A 【SGS-THOMSON】
(Serial Interface Transmission Decoder)

Pin labels (left side, top view): QFS 28, CX 29, GND 30, MON 31, ADS 32, DIX 33, DIY 34, DPR 35, FV 36, 37 ESI

Top pins: GND, AIX, AIY, GND, V_EE, RSE, EVR, SYN, PCK — 27 26 25 24 23 22 21 20 19

Right pins: 18 D0, 17 D1, 16 D2, 15 D3, 14 D4, 13 D5, 12 D6, 11 D7, 10 D8

Bottom pins: 1 2 3 4 5 6 7 8 9 — ESO GND SY SX QSW TN1 V_EE V_EE D9

Block diagram
EVR SYN PCK D0 D1 D2 D3 D4 D5 D6 D7 D8 D9

GND, GND 24, GND 27, GND 30

TIMING GENERATOR, Parallel Clock, 10-BIT LATCH, V_EE
ECL OUT REFERENCE VOLTAGE, SYNC DETECTOR, 30-BIT SHIFT REGISTER, V_EE
X⁷+X⁴+1 DESCRAMBLER → X^7+X^4+1 DESCRAMBLER, V_EE

AIX 26, AIY 25, QFS 28, CX 29, MON 31 → AUTOMATIC CABLE EQUALIZER
DATA DETECTOR, NRZI TO NRZ, Reclocked serial data — SX, SY
INPUT SELECT, DATA RELAY, EDGE DETECTOR, PHASE DETECTOR, VCO, RSE
Serial Clock

DIX DIY, ADS, TN1, QSW DPR FV ESO ESI

TA78L009AP 【TOSHIBA】
(Refer to TA78L005AP.)

TC4011BP 【TOSHIBA】
(Quad 2 Input NAND Gate)

Top pins: V_DD A_4 B_4 X_4 X_3 B_3 A_3 — 14 13 12 11 10 9 8
Bottom pins: A_1 B_1 X_1 X_2 B_2 A_2 V_SS — 1 2 3 4 5 6 7

(TOP VIEW)

TRUTH TABLE

A	B	X
L	L	H
L	H	H
H	L	H
H	H	L

$X = \overline{A \cdot B}$

TC4051BP 【TOSHIBA】
(Single 8 Channel Analog Multiplexers/Demultiplexers)

CHANNELS IN/OUT: 4, 16 V_DD, 15 2, 14 1, 13 0, 12 3, 1 4, 5 5, 2 6, 4 7
COM OUT/IN: 3, INH 6, V_EE, V_SS, 11 A, 10 B, 9 C

*CHANNELS IN/OUT   TOP VIEW

TRUTH TABLE

CONTROL INPUTS				"ON" CHANNEL
INHIBIT	C	B	A	4051
L	L	L	L	0
L	L	L	H	1
L	L	H	L	2
L	L	H	H	3
L	H	L	L	4
L	H	L	H	5
L	H	H	L	6
L	H	H	H	7
H	※	※	※	NONE
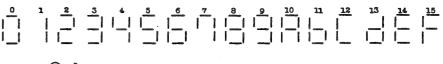
※ Don't Care.

LOGIC DIAGRAM

(16) V_DD
A (11), B (10), C (9), INH (6), LOGIC LEVEL CONVERTER
OUT C IN (13) 0, (14) 1, (15) 2, (12) 3, (1) 4, (5) 5, (2) 6, (4) 7
(3) COMMON
(8) V_SS   (7) V_EE

TC4584BP 【TOSHIBA】
(Hex Schmitt Trigger)

I_1 1 — 14 V_DD
O_1 2 — 13 I_6
I_2 3 — 12 O_6
O_2 4 — 11 I_5
I_3 5 — 10 O_5
O_3 6 — 9 I_4
V_SS 7 — 8 O_4

(TOP VIEW)
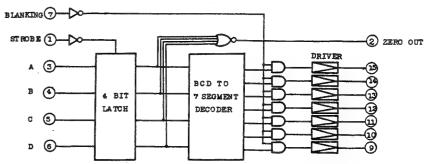
TC74AC112F 【TOSHIBA】
(Dual J-K Flip-Flop With Preset AND Clear)

1CK 1 — 16 V_CC
1K 2 — 15 1CLR
1J 3 — 14 2CLR
1PR 4 — 13 2CK
1Q 5 — 12 2K
1Q̄ 6 — 11 2J
2Q̄ 7 — 10 2PR
GND 8 — 9 2Q

(TOP VIEW)

TRUTH TABLE
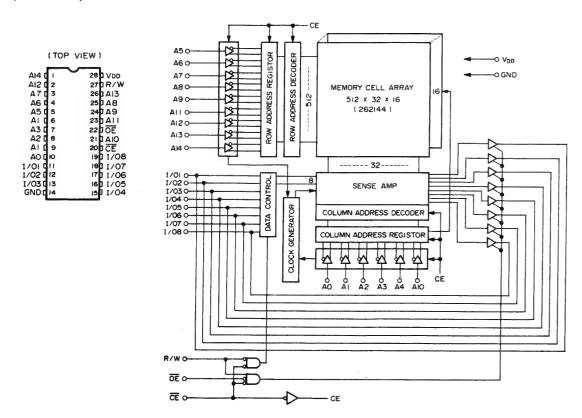
INPUTS					OUTPUTS		FUNCTION
CLR	PR	J	K	CK	Q	Q̄	
L	H	X	X	X	L	H	CLEAR
H	L	X	X	X	H	L	PRESET
L	L	X	X	X	H	H	
H	H	L	L	↧	Q_n	Q̄_n	NO CHANGE
H	H	L	H	↧	L	H	
H	H	H	L	↧	H	L	
H	H	H	H	↧	Q̄_n	Q_n	TOGGLE
H	H	X	X	↥	Q_n	Q̄_n	NO CHANGE

X : Don't Care

TC5068BP 【TOSHIBA】
(BCD to 7 Segment Latch/Decoder/Driver)

ST 1 — 16 V_DD
ZO 2 — 15 a
A 3 — 14 b
B 4 — 13 c
C 5 — 12 d
D 6 — 11 e
BL 7 — 10 f
V_SS 8 — 9 g

(TOP VIEW)

Truth Table

INPUTS						OUTPUTS														ZERO
						TC 5068 BP △							TC5069BP △							OUT
ST	BL	D	C	B	A	a	b	c	d	e	f	g	a	b	c	d	e	f	g	
※	H	※	※	※	※	L	L	L	L	L	L	L	H	H	H	H	H	H	H	☆
H	L	L	L	L	L	H	H	H	H	H	H	L	L	L	L	L	L	L	H	H
H	L	L	L	L	H	L	H	H	L	L	L	L	H	L	L	H	H	H	H	H
H	L	L	L	H	L	H	H	L	H	H	L	H	L	L	H	L	L	H	L	H
H	L	L	L	H	H	H	H	H	H	L	L	H	L	L	L	L	H	H	L	H
H	L	L	H	L	L	L	H	H	L	L	H	H	H	L	L	H	H	L	L	H
H	L	L	H	L	H	H	L	H	H	L	H	H	L	H	L	L	H	L	L	H
H	L	L	H	H	L	H	L	H	H	H	H	H	L	H	L	L	L	L	L	H
H	L	L	H	H	H	H	H	H	L	L	L	L	L	L	L	H	H	H	H	H
H	L	H	L	L	L	H	H	H	H	H	H	H	L	L	L	L	L	L	L	H
H	L	H	L	L	H	H	H	H	H	L	H	H	L	L	L	L	H	L	L	H
H	L	H	L	H	L	H	H	L	L	H	H	H	L	L	H	H	L	L	L	H
H	L	H	L	H	H	L	L	H	H	H	H	L	H	H	L	L	L	L	H	H
H	L	H	H	L	L	L	H	L	H	H	H	L	H	L	H	L	L	L	H	H
H	L	H	H	L	H	H	L	L	L	H	H	H	L	H	H	H	L	L	L	H
H	L	H	H	H	L	L	L	L	L	L	H	H	H	H	H	H	H	L	L	H
L	L	※	※	※	※								△△							

※ ; Don't care
☆ ; Undetermined
△△ ; Depends Upon the BCD Code Previously applied when ST = "H"
△ ; Required pull down resister "R_L"

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Block diagram
BLANKING (7), STROBE (1), A (3), B (4), C (5), D (6)
4 BIT LATCH, BCD TO 7 SEGMENT DECODER, DRIVER
(2) ZERO OUT
outputs: 15, 14, 13, 12, 11, 10, 9

■ TC55257BPL-10 【TOSHIBA】
(Static RAM)

(TOP VIEW)

```
AI4  1        28  VDD
AI2  2        27  R/W
A7   3        26  AI3
A6   4        25  A8
A5   5        24  A9
AI   6        23  AII
A3   7        22  OE
A2   8        21  AIO
AI   9        20  CE
AO  10        19  I/O8
I/OI 11       18  I/O7
I/O2 12       17  I/O6
I/O3 13       16  I/O5
GND 14        15  I/O4
```

■ TC74AC164F 【TOSHIBA】
(8-Bit Serial Input/Parallel Output Shift Registers, Synchronous Clear)

Timing chart

True table

Input			output	
RESET	CLOCK	A B	QA QB ...... QH	
L	X	X X	L L L	
H	⌐	X X	No change	
H	⌐	L X	L QA ...... QG	
H	⌐	X L	L QA ...... QG	
H	⌐	H H	H QA ...... QG	

H : Hi Level   L : Low Level   X : H or L

■ TC74HC00AP 【TOSHIBA】
(Refer to TC74HC00AF.)

■ TC74HC04AP 【TOSHIBA】
(Refer to TC74HC04AF.)

■ TC74AC273P 【TOSHIBA】
(Octal D-Type Flip-Flops With Common Clock and Clear)


```
CLEAR 1       20  VCC
Q1    2       19  Q8
D1    3       18  D8
D2    4       17  D7
Q2    5       16  Q7
Q3    6       15  Q6
D3    7       14  D6
D4    8       13  D5
Q4    9       12  Q5
GND  10       11  CLOCK
```
(TOP VIEW)

TRUE Table

INPUTS			OUTPUTS	FUNCTION
CLEAR	D	CLOCK	Q	
L	X	X	L	Clear
H	L	⌐	L	—
H	H	⌐	H	—
H	X	⌐	Qn	No change

X : Don't care

■ TC74AC164P 【TOSHIBA】
(Refer to TC74AC164F.)

■ TC74AC74F 【TOSHIBA】
(Refer to SN74HC74N.)

■ TC74AC161FTP1 【TOSHIBA】
(Synchronous 4-Bit Counters Binary, Direct Clear)


```
CLEAR1  1      16  VCC
CLOCK2  2      15  CARRY OUTPUT
A3      3      14  QA
DATA    B4     13  QB   OUT-
IN      C5     12  QC   PUTS
        D6     11  QD
ENABLE P7      10  ENABLE T
GND8    8       9  LOAD
```
(TOP VIEW)

Timing chart

• THRU TABLE

74HC160A/161A									FUNCTION
INPUTS					OUTPUTS				
CLR	LD	ENP	ENT	CK	QA	QB	QC	QD	
L	X	X	X	X	L	L	L	L	Reset to "0"
H	L	X	X	⌐	A	B	C	D	Preset Data
H	H	X	L	⌐	No change				Do not count
H	H	L	X	⌐	No change				Do not count
H	H	H	H	⌐	Count up				Count
H	X	X	X	⌐	No change				Do not count

Note X : Don't care
A,B,C,D : Logic level of input data
Carry : CARRY=ENT·QA·QB·QC·QD ·······(TC74HC161A)

■ TC74HC04AF 【TOSHIBA】
(Hex Inverters)


```
1A  1        14  VCC
1Y  2        13  6A
2A  3        12  6Y
2Y  4        11  5A
3A  5        10  5Y
3Y  6         9  4A
GND 7         8  4Y
```
(TOP VIEW)

■ TC74HC123AF 【TOSHIBA】
(Dual Retriggerable Monostable Multivibrators)
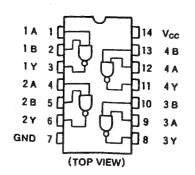

```
1A   1        16  Vcc
1B   2        15  1Rx/Cx
1CL  3        14  1Cx
1Q   4        13  1Q
2Q   5        12  2Q
2Cx  6        11  2CL
2Rx/Cx 7      10  2B
GND  8         9  2A
```
(TOP VIEW)

TRUE Table

INPUTS			OUTPUTS		NOTE
A	B	OL	Q	Q	
⌐	H	H	⌐⌐	⊔⊔	OUTPUT ENABLE
X	L	H	L	H	INHIBIT
H	X	H	L	H	INHIBIT
L	⌐	H	⊔⊔	⊔⊔	OUTPUT ENABLE
L	H	⌐	⊔⊔	⊔⊔	OUTPUT ENABLE
X	X	L	L	H	INHIBIT
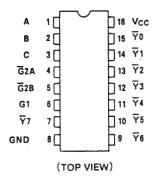
X : DON'T CARE

■ TC74HC00AF 【TOSHIBA】
(Quad 2-Input NAND Gates)


```
1A  1        14  VCC
1B  2        13  4B
1Y  3        12  4A
2A  4        11  4Y
2B  5        10  3B
2Y  6         9  3A
GND 7         8  3Y
```
(TOP VIEW)

TRUE Table

A	B	Y
L	L	H
L	H	H
H	L	H
H	H	L

3-89   3-89
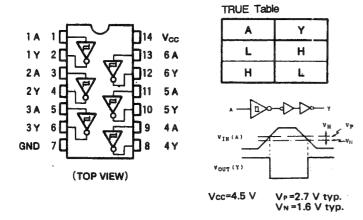
■ TC74HC138AP 【TOSHIBA】
(3-Line to 8-Line Decoders/Demultiplexers)
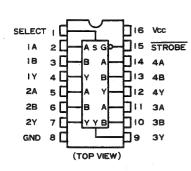
(TOP VIEW)

INPUTS						OUTPUTS								SELECTED OUTPUT
ENABLE			SELECT											
G1	$\overline{G2A}$	$\overline{G2B}$	C	B	A	$\overline{Y0}$	$\overline{Y1}$	$\overline{Y2}$	$\overline{Y3}$	$\overline{Y4}$	$\overline{Y5}$	$\overline{Y6}$	$\overline{Y7}$	
L	X	X	X	X	X	H	H	H	H	H	H	H	H	NONE
X	H	X	X	X	X	H	H	H	H	H	H	H	H	NONE
X	X	H	X	X	X	H	H	H	H	H	H	H	H	NONE
H	L	L	L	L	L	L	H	H	H	H	H	H	H	$\overline{Y0}$
H	L	L	L	L	H	H	L	H	H	H	H	H	H	$\overline{Y1}$
H	L	L	L	H	L	H	H	L	H	H	H	H	H	$\overline{Y2}$
H	L	L	L	H	H	H	H	H	L	H	H	H	H	$\overline{Y3}$
H	L	L	H	L	L	H	H	H	H	L	H	H	H	$\overline{Y4}$
H	L	L	H	L	H	H	H	H	H	H	L	H	H	$\overline{Y5}$
H	L	L	H	H	L	H	H	H	H	H	H	L	H	$\overline{Y6}$
H	L	L	H	H	H	H	H	H	H	H	H	H	L	$\overline{Y7}$

X : DONT' CARE

■ TC74HC14AP 【TOSHIBA】
(Hex Schmitt-Trigger Inverters)

(TOP VIEW)

TRUE Table

A	Y
L	H
H	L

Vcc=4.5 V   Vₚ=2.7 V typ.   Vₙ=1.6 V typ.
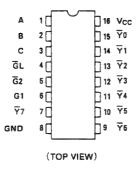
■ TC74HC157AP 【TOSHIBA】
(Quad 2-Line to 1-Line Data Selectors/Multiplexers,NON-Inverted Data Outputs)

(TOP VIEW)
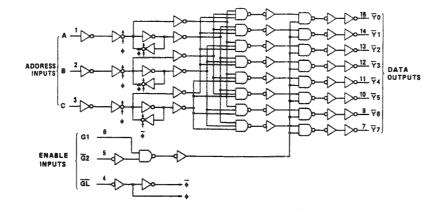
TRUE Table

INPUTS				OUTPUT
STROBE	SELECT	A	B	Y
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

X:DON'T CARE

■ TC74HC137AP 【TOSHIBA】
(3-TO-8 Line Decoder/Latch)
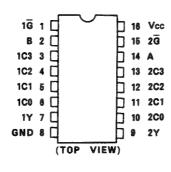
TRUTH TABLE

INPUTS						OUTPUTS								SELECTED OUTPUT
ENABLE			ADDRESS											
$\overline{GL}$	$\overline{G2}$	$\overline{G1}$	C	B	A	$\overline{Y0}$	$\overline{Y1}$	$\overline{Y2}$	$\overline{Y3}$	$\overline{Y4}$	$\overline{Y5}$	$\overline{Y6}$	$\overline{Y7}$	
X	X	L	X	X	X	H	H	H	H	H	H	H	H	NONE
X	H	X	X	X	X	H	H	H	H	H	H	H	H	NONE
L	L	H	L	L	L	L	H	H	H	H	H	H	H	$\overline{Y0}$
L	L	H	L	L	H	H	L	H	H	H	H	H	H	$\overline{Y1}$
L	L	H	L	H	L	H	H	L	H	H	H	H	H	$\overline{Y2}$
L	L	H	L	H	H	H	H	H	L	H	H	H	H	$\overline{Y3}$
L	L	H	H	L	L	H	H	H	H	L	H	H	H	$\overline{Y4}$
L	L	H	H	L	H	H	H	H	H	H	L	H	H	$\overline{Y5}$
L	L	H	H	H	L	H	H	H	H	H	H	L	H	$\overline{Y6}$
L	L	H	H	H	H	H	H	H	H	H	H	H	L	$\overline{Y7}$
H	L	H	X	X	X	$\overline{GL}$の立ち上がり直前の出力状態が保持されます。								

X:Don't care
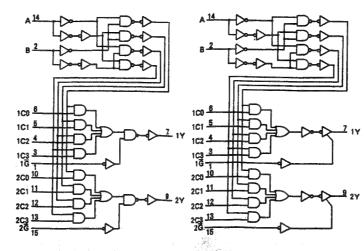
■ TC74HC153AP 【TOSHIBA】
(Dual 4-Channel Multiplexer)

(TOP VIEW)

TRUTH TABLE
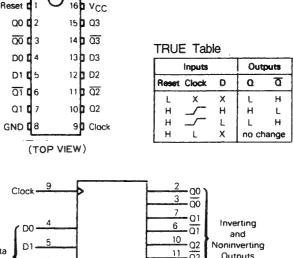
SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT Y	
B	A	C0	C1	C2	C3	$\overline{G}$	HC153A	HC253A
X	X	X	X	X	X	H	L	Z
L	L	L	X	X	X	L	L	L
L	L	H	X	X	X	L	H	H
L	H	X	L	X	X	L	L	L
L	H	X	H	X	X	L	H	H
H	L	X	X	L	X	L	L	L
H	L	X	X	H	X	L	H	H
H	H	X	X	X	L	L	L	L
H	H	X	X	X	H	L	H	H

BLOCK DIAGRAM

■ TC74HC175AP 【TOSHIBA】
(Quad D-Type Flip-Flops With Complementary Outputs Common Clock and Reset)

(TOP VIEW)

TRUE Table

Inputs			Outputs	
Reset	Clock	D	Q	$\overline{Q}$
L	X	X	L	H
H	↑	H	H	L
H	↑	L	L	H
H	L	X	no change	

Vcc = 16 Pin
GND = 8 Pin

■ TC74HC161AP 【TOSHIBA】
(Refer to TC74AC161FTP1.)

■ TC74HC164AF 【TOSHIBA】
(Refer to TC74AC164F.)

■ TC74HC244AF 【TOSHIBA】
(Refer to SN74HC244N.)
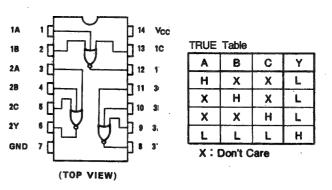
■ TC74HC245AP 【TOSHIBA】
(Refer to SN74HC245N.)
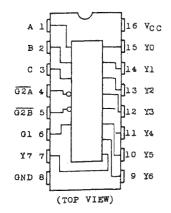
■ TC74HC245AF 【TOSHIBA】
(Refer to SN74HC245N.)

■ TC74HC273AP 【TOSHIBA】
(Triple 3-Input NOR Gates)

(TOP VIEW)

TRUE Table

A	B	C	Y
H	X	X	L
X	H	X	L
X	X	H	L
L	L	L	H

X : Don't Care
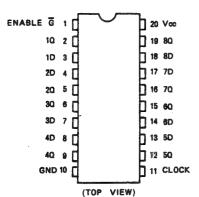
■ TC74HC238AP 【TOSHIBA】
(3–Line to 8–Line Decoders/Demultiplexers)
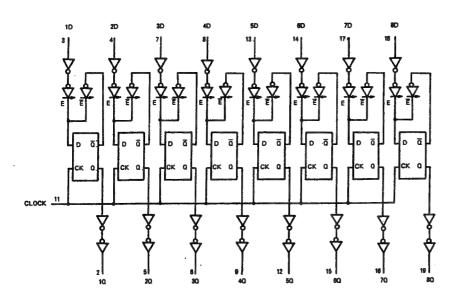
(TOP VIEW)

TRUE Table

INPUTS						OUTPUTS								SELECTED OUTPUT
ENABLE			SELECT											
G2B	G2A	G1	C	b	A	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	
X	X	L	X	X	X	L	L	L	L	L	L	L	L	NONE
X	H	X	X	X	X	L	L	L	L	L	L	L	L	NONE
H	X	X	X	X	X	L	L	L	L	L	L	L	L	NONE
L	L	H	L	L	L	H	L	L	L	L	L	L	L	Y0
L	L	H	L	L	H	L	H	L	L	L	L	L	L	Y1
L	L	H	L	H	L	L	L	H	L	L	L	L	L	Y2
L	L	H	L	H	H	L	L	L	H	L	L	L	L	Y3
L	L	H	H	L	L	L	L	L	L	H	L	L	L	Y4
L	L	H	H	L	H	L	L	L	L	L	H	L	L	Y5
L	L	H	H	H	L	L	L	L	L	L	L	H	L	Y6
L	L	H	H	H	H	L	L	L	L	L	L	L	H	Y7

X : DON'T CARE
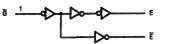
■ TC74HC377AP 【TOSHIBA】
(Octal D–Type Flip–Flop)

(TOP VIEW)

TRUTH TABLE

INPUTS			OUTPUTS
G̅	CLOCK	DATA	Q
H	X	X	No Change
L	↑	L	L
L	↑	H	H
X	↓	X	No Change
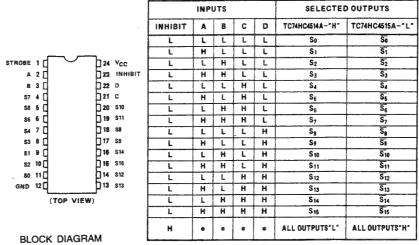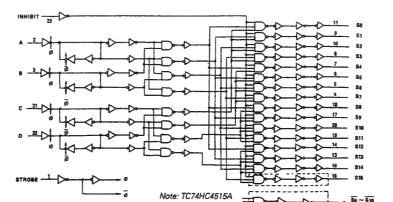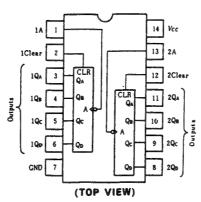
■ TC74HC4514AP 【TOSHIBA】
(4–TO–16 Line Decoder/Latch)

TRUTH TABLE

INPUTS					SELECTED OUTPUTS	
INHIBIT	A	B	C	D	TC74HC4514A–"H"	TC74HC4515A–"L"
L	L	L	L	L	S0	S̅0
L	H	L	L	L	S1	S̅1
L	L	H	L	L	S2	S̅2
L	H	H	L	L	S3	S̅3
L	L	L	H	L	S4	S̅4
L	H	L	H	L	S5	S̅5
L	L	H	H	L	S6	S̅6
L	H	H	H	L	S7	S̅7
L	L	L	L	H	S8	S̅8
L	H	L	L	H	S9	S̅9
L	L	H	L	H	S10	S̅10
L	H	H	L	H	S11	S̅11
L	L	L	H	H	S12	S̅12
L	H	L	H	H	S13	S̅13
L	L	H	H	H	S14	S̅14
L	H	H	H	H	S15	S̅15
H	•	•	•	•	ALL OUTPUTS "L"	ALL OUTPUTS "H"

(TOP VIEW)

BLOCK DIAGRAM

Note: TC74HC4515A

■ TC74HC393AP 【TOSHIBA】
(Dual 4–Bit Binary Ripple Counters)
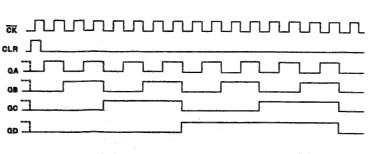
(TOP VIEW)
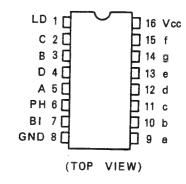
COUNT SEQUENCE (EACH COUNTER)

COUNT	OUTPUT			
	QD	QC	QB	QA
0	L	L	L	L
1	L	L	L	H
2	L	L	H	L
3	L	L	H	H
4	L	H	L	L
5	L	H	L	H
6	L	H	H	L
7	L	H	H	H
8	H	L	L	L
9	H	L	L	H
10	H	L	H	L
11	H	L	H	H
12	H	H	L	L
13	H	H	L	H
14	H	H	H	L
15	H	H	H	H
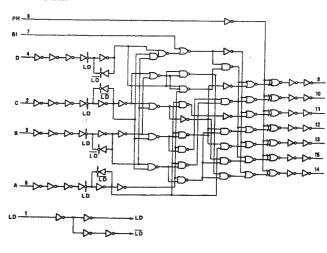
Timing chart
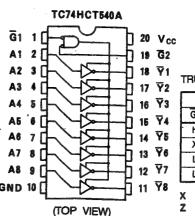
■ TC74HC4543AP 【TOSHIBA】
(BCD To 7 Segment Latch/Decoder/Driver)

(TOP VIEW)
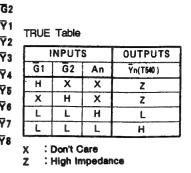
BLOCK DIAGRAM

■ TC74HC4515AP 【TOSHIBA】
(Refer to TC74HC4514AP.)

■ TC74HC574AF 【TOSHIBA】
(Refer to SN74ABT574N.)

■ TC74HC540AP 【TOSHIBA】
(Octal Bus Buffer With Inverted 3–State Outputs)

TC74HCT540A

(TOP VIEW)

TRUE Table

INPUTS			OUTPUTS
G̅1	G̅2	An	Y̅n(T540)
H	X	X	Z
X	H	X	Z
L	L	H	L
L	L	L	H

X : Don't Care
Z : High Impedance

■ TC74HC574AP 【TOSHIBA】
(Refer to SN74ABT574N.)

■ TC74HC74AP 【TOSHIBA】
(Refer to SN74HC74N.)

■ TC74HCU04AF 【TOSHIBA】
(Refer to TC74HC04AF.)

■ TC74HCU04AP 【TOSHIBA】
(Refer to TC74HC04AF.)

■ TD62083CP 【TOSHIBA】
(Darlington Transistor Array)

(TOP VIEW)

■ TDA8708AT 【PHILIPS】
(Video Analog Input Interface)

(TOP VIEW)

■ TD74BC244FER 【TOSHIBA】
(Refer to SN74HC244N.)

■ TD74BC244P 【TOSHIBA】
(Refer to SN74HC244N.)

■ TD74BC574F 【TOSHIBA】
(Refer to SN74ABT574N.)

■ TD74BC574P 【TOSHIBA】
(Refer to SN74ABT574N.)

■ TL062CP 【TEXAS】
(Operational Amplifire)
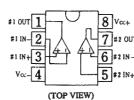
(TOP VIEW)
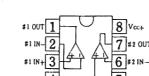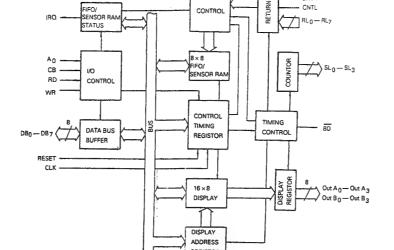
■ TMP82C79P-2(B) 【TOSHIBA】
(Programable Interface)
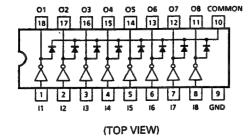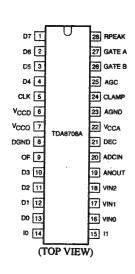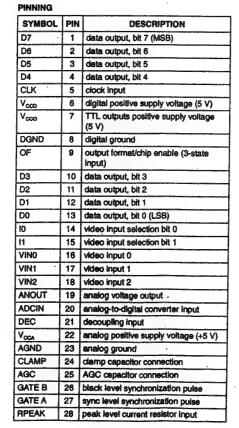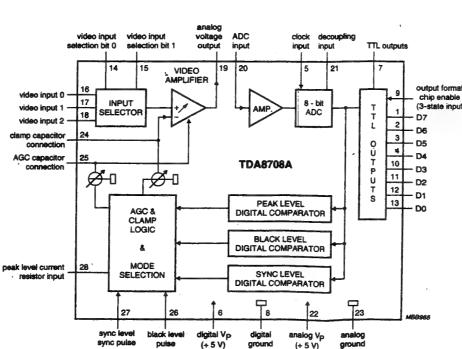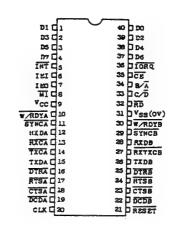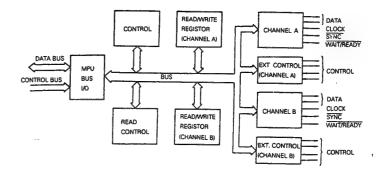
■ TMPZ84C015BF-8 【TOSHIBA】
(Micro Processor)

TMPZ84C015AF
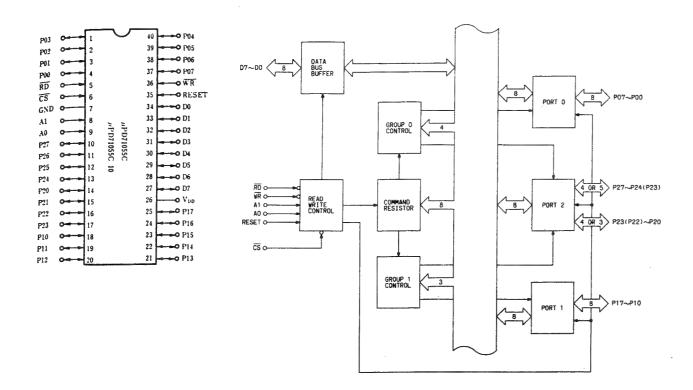
■ TMPZ84C40AP-8 【TOSHIBA】
(SIO)

PINNING

SYMBOL	PIN	DESCRIPTION
D7	1	data output, bit 7 (MSB)
D6	2	data output, bit 6
D5	3	data output, bit 5
D4	4	data output, bit 4
CLK	5	clock input
V_{CCD}	6	digital positive supply voltage (5 V)
V_{CCO}	7	TTL outputs positive supply voltage (5 V)
DGND	8	digital ground
OF	9	output format/chip enable (3-state input)
D3	10	data output, bit 3
D2	11	data output, bit 2
D1	12	data output, bit 1
D0	13	data output, bit 0 (LSB)
I0	14	video input selection bit 0
I1	15	video input selection bit 1
VIN0	16	video input 0
VIN1	17	video input 1
VIN2	18	video input 2
ANOUT	19	analog voltage output
ADCIN	20	analog-to-digital converter input
DEC	21	decoupling input
V_{CCA}	22	analog positive supply voltage (+5 V)
AGND	23	analog ground
CLAMP	24	clamp capacitor connection
AGC	25	AGC capacitor connection
GATE B	26	black level synchronization pulse
GATE A	27	sync level synchronization pulse
RPEAK	28	peak level current resistor input

TDA8708A

VIDEO AMPLIFIER

INPUT SELECTOR

AMP.

8 - bit ADC

TTL OUTPUTS

AGC & CLAMP LOGIC & MODE SELECTION

PEAK LEVEL DIGITAL COMPARATOR

BLACK LEVEL DIGITAL COMPARATOR

SYNC LEVEL DIGITAL COMPARATOR

UPD71055C 〔NEC〕
(Parallel Input/Output Port)

74AC00PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC00AF.)

74AC04PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC04AF.)

VC2100 〔JVC〕
(Sync Separater)

74AC153PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC153AP.)

74AC157PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC157AP.)

74AC161PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74AC161FTP1.)

74AC175PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC175AP.)

74AC175SJ 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC175AP.)

74AC377PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC377AP.)

UPD9316GB 〔NEC〕
(Sync Signal Generator)
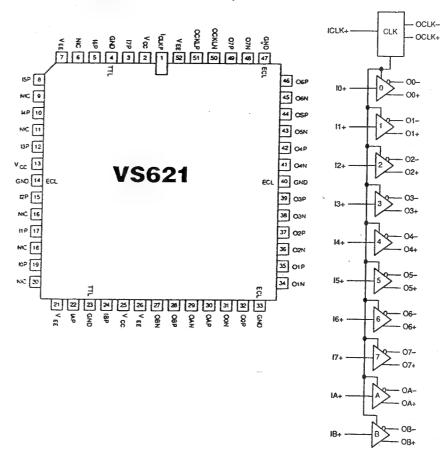
Pin		Function
1	VD	V-Drive Pulse output
2	FI	Field Index Pulse output. (Odd : L EVEN : H)
3	CPBL	Clamp Pulse Blanking input (CPBL : H → BCP1, BCP2 : L)
4	BCP1	Optical Black Clamp Pulse output
5	BCP2	" (BCP1 + 0.8 μsec)
6	PBLK	Composite Blanking Output
7	HG1	H-Gate Pulse output (NTSC : Reset at 14H, PAL : 9H)
8	HG2	H-Gate Pulse output (NTSC : Reset at 277H, PAL : 322H)
9	WBLK	Wide Blanking Pulse Output
10	4FSC	4fsc input (NTSC : 14.31818, PAL : 17.734475)
11	TST1	Test Terminal
12	CFMO	Color Flaming Pulse Output
13	CFMI	" Input
14	TST3	Test Terminal
15	SC1	Sub Carrier output
16	SC2	" (NTSC : SC1 −90° / PAL (LSW = L) : SC1 −90° / PAL (LSW = H) : SC1 +90°)
17	GND	GND
18	WHD	Wide H-Drive Pulse output
19	VRI	V-Reset Pulse Input
20	BF	Burst Flag Pulse output
21	BFBL	Burst Flag Blanking
22	TVM2	
23	TVM1	
24	LRST	Reset Input for Line switch
25	LSW	Line Switch Pulse output
26	ENCP	Encorder Clamp Pulse output
27	CBLK	Composite Blanking output
28	CSYN	Composite Sync Signal output
29	TST5	Test Terminal
30	FRP2	Frame Read Pulse (For VTR Servo Lock)
31	FRP1	"
32	INVO	Inverter output
33	INVI	Inverter Input
34	TST4	Test Terminal
35	HBLK	H-transfer Pulse Blanking
36	CPMD	
37	TST2	Test Terminal
38	CLKI	Master Clock Input
39	VDD	+5 V Input
40	EOO	Phase Comparater output
		(PRI Compare CPI / PRI Advance : ↑ / CPI Advance : ↓ / Equal : 0)
41	CPI	Clock input
42	HD	H-Drive Pulse output
43	PRI	Reference Clock input
44	SCHD	H-Drive Pulse output (SCHD = $\frac{4}{910}$ FSC)

For pins 22/23 (TVM2/TVM1):

L	L	H	H
L	H	L	H
NTSC	X	PAL	SECAM

VS621PLJ 〔VTC〕
(10-Bit Video Line Drivers)

VS621

3-93   3-93
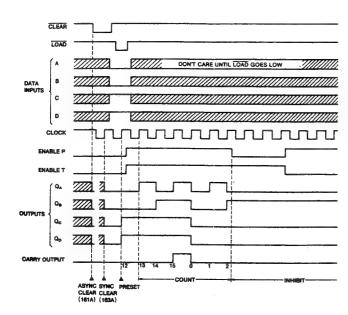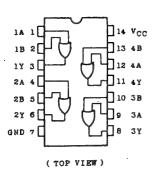
74AC163PC 〔NATIONAL SEMI CONDUCTOR〕
(Synchronous 4-Bit Counters Binary,
Synchronous Clear)

Pin assignment (TOP VIEW):

Pin		Pin	
CLEAR	1	16	Vcc
CLOCK	2	15	CARRY OUTPUT
A	3	14	QA
B	4	13	QB
C	5	12	QC
D	6	11	QD
ENABLE P	7	10	ENABLE T
GND	8	9	LOAD

DATA IN: A, B, C, D — OUTPUTS: QA, QB, QC, QD

TRUE Table

SN74HC163N INPUTS					OUTPUTS				FUNCTION	
CLR	LD	PE	TE	CK	Q_A	Q_B	Q_C	Q_D		
L	*	*	*	↑	L	L	L	L	REST TO '0'	
H	L	*	*	↑	A	B	C	D	PRESET DATA	
H	H	*	L	↑	NO CHANGE				NO COUNT	
H	H	L	*	↑	NO CHANGE				NO COUNT	
H	H	H	H	↑	COUNT UP				COUNT	
*	*	*	*	⌐	NO CHANGE				NO COUNT	

Note * ; Don't Care
A,B,C,D ; Logic Level of Data Inputs
Carry ; CARRY = TE·Q_A·Q_B·Q_C·Q_D

Timing chart

Signals: CLEAR, LOAD, DATA INPUTS (A, B, C, D — DON'T CARE UNTIL LOAD GOES LOW), CLOCK, ENABLE P, ENABLE T, OUTPUTS (Q_A, Q_B, Q_C, Q_D), CARRY OUTPUT
Count markers: 12 13 14 15 0 1 2 — COUNT — INHIBIT
ASYNC CLEAR (161A) SYNC CLEAR (163A) PRESET

74AC32PC 〔NATIONAL SEMI CONDUCTOR〕
(Quad 2-Input OR Gates)

Pin assignment (TOP VIEW):

Pin		Pin	
1A	1	14	Vcc
1B	2	13	4B
1Y	3	12	4A
2A	4	11	4Y
2B	5	10	3B
2Y	6	9	3A
GND	7	8	3Y

TRUE Table
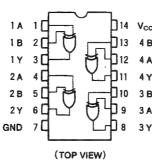
A	B	Y
H	H	H
L	H	H
H	L	H
L	L	L

74AC377SJL 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC377AP.)

74AC540PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC540AP.)

74AC574PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to SN74ABT574N.)

74AC574SJ 〔NATIONAL SEMI CONDUCTOR〕
(Refer to SN74ABT574N.)

74AC74PC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to SN74HC74N.)
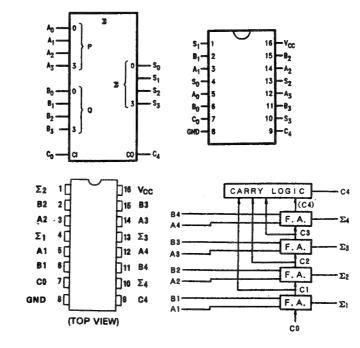
74AC86PC 〔NATIONAL SEMI CONDUCTOR〕
(Quad 2-Input Exclusive-OR Gates)

Pin assignment (TOP VIEW):

Pin		Pin	
1A	1	14	Vcc
1B	2	13	4B
1Y	3	12	4A
2A	4	11	4Y
2B	5	10	3B
2Y	6	9	3A
GND	7	8	3Y

TRUE Table

A	B	Y
H	H	L
L	H	H
H	L	H
L	L	L

74F283PC 〔NATIONAL SEMI CONDUCTOR〕
(4-Bit Binary Full Adder With Fast Carry)

Pin assignment (TOP VIEW):

Pin		Pin	
S_1	1	16	Vcc
B_1	2	15	B_2
A_1	3	14	A_2
S_0	4	13	S_2
A_0	5	12	A_3
B_0	6	11	B_3
C_0	7	10	S_3
GND	8	9	C_4

Second pinout:

Pin		Pin	
$\Sigma 2$	1	16	Vcc
B2	2	15	B3
A2	3	14	A3
$\Sigma 1$	4	13	$\Sigma 3$
A1	5	12	A4
B1	6	11	B4
C0	7	10	$\Sigma 4$
GND	8	9	C4

CARRY LOGIC — C4
B4, A4 → F.A. → $\Sigma 4$ (C4), C3
B3, A3 → F.A. → $\Sigma 3$, C2
B2, A2 → F.A. → $\Sigma 2$, C1
B1, A1 → F.A. → $\Sigma 1$, C0

TRUE Table
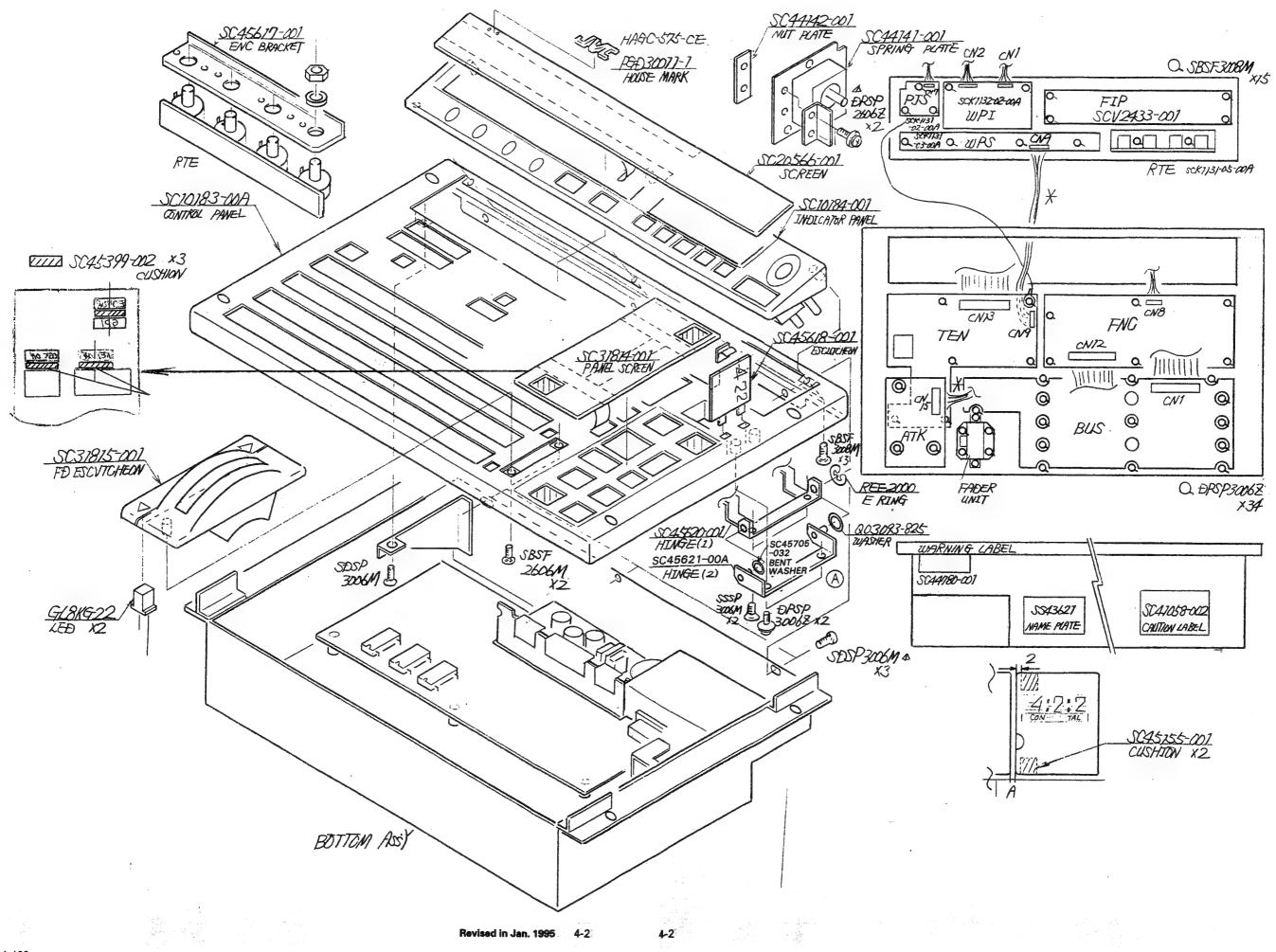
INPUTS			OUTPUTS	
Bn	An	cn−1	Σn	Cn
L	L	L	L	L
L	L	H	H	L
L	H	L	H	L
L	H	H	L	H
H	L	L	H	L
H	L	H	L	H
H	H	L	L	H
H	H	H	H	H

74AC86SJ 〔NATIONAL SEMI CONDUCTOR〕
(Refer to 74AC86PC.)

74F157APC 〔NATIONAL SEMI CONDUCTOR〕
(Refer to TC74HC157AP.)

74F86SJL 〔NATIONAL SEMI CONDUCTOR〕
(Refer to 74AC86PC.)
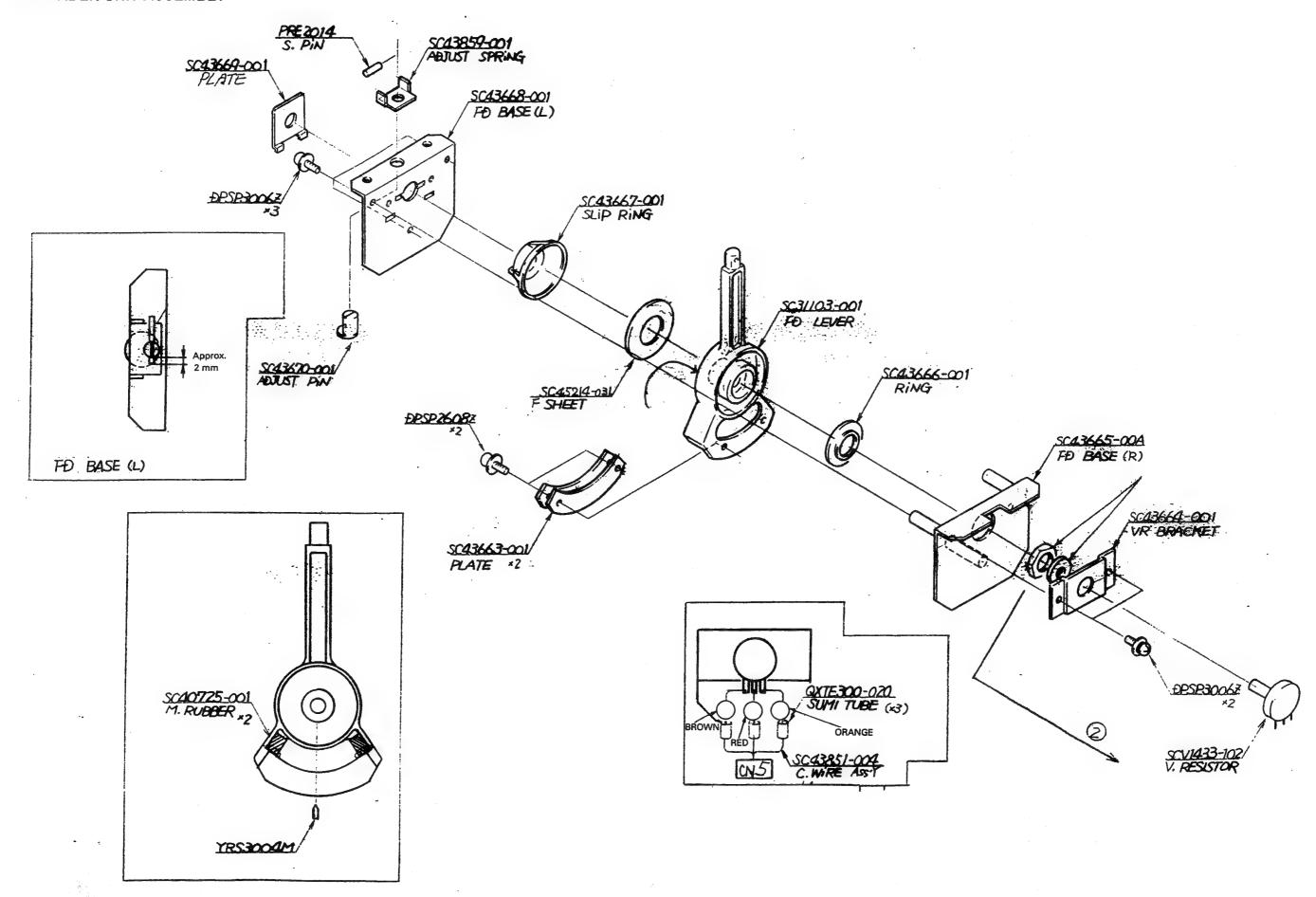
4.1 KM-5000P (CONTROL UNIT) ASSEMBLY

4.1.1 BOTTOM ASSEMBLY

SC40855-001
E. LABEL

DRSP3006Z
X8

SCV2605-09SN
DUST COVER

MIND BOARD

SBST3008M
X2

POWER SWITCH ASSY

SSV0577
AC INLET

SCV1508-002
PS. PC BOARD ASS'Y

SC10182-00A
BOTTOM CASE

SBST
3008M
X2

E03679-001
GND TERMINAL

E47227-006
FOOT X4

SC20565-001
REAR COVER

DRSP
3006Z
X2

LRSP4006Z X4

SC41252-001
CAUTION LABEL

SC46616-001
BRACKET

SC46913-002
HINGE X2

SDSP
3006M
X4

SDSP
3006M
X4

SDSP3006M

4.1.3 FADER UNIT ASSEMBLY

PRE2014
S. PIN

SC43859-001
ADJUST SPRING

SC43669-001
PLATE

SC43668-001
FD BASE (L)

SC43667-001
SLIP RING

DPSP3006Z
×3

Approx.
2 mm

SC43670-001
ADJUST PIN

FD BASE (L)

SC31103-001
FD LEVER

SC43666-001
RING

SC45214-031
F SHEET

DPSP2608Z
×2

SC43665-00A
FD BASE (R)

SC43663-001
PLATE ×2

SC43664-001
VR BRACKET

SC40725-001
M. RUBBER ×2

QXTE300-020
SUMI TUBE (×3)

BROWN

ORANGE

RED

CN5

SC43851-004
C. WIRE ASSY

②

DPSP3006Z
×2

SCV1433-102
V. RESISTOR

YRS3004M

SC45629-001
PS KNOB

SC43662-001
FD KNOB

WBS 3000N

LPSP3008M

SCV2435-001
CAP (32/3/03) X4

SCV2434-001
KNOB (26/3/03) X4

SC45291-001
CAP X4

SDSP3006R X2

SDSP3006M X3

SCV2466-021
CAP X45

SC31817-00A
TITLE SHEET SRC

SCV2466-011
PLATE X45

SCV430-001
CAP

SC31816-XXX
TTL SHEET

SCV1429-XXX
KNOB

SCV1431-001
LAMP X64

No	Parts No.	TITLE SEEET	REMARK	Q'TY
46	SCV1429-901	SC31816-011	BLACK	2
47				24
48		SC31816-021	BACK COLOR	2
49		-081	MIE	1
50		061	PVW	1
51		071	PGM	1
52	SCV1429-401	011	BLACK	1
53				12
54		SC31816-021	BACK COLOR	1
55	-301	011	BLACK	1
56				12
57		SC31816-021	BACK COLOR	1
58	-901	031	CUT	2
59	-301	041	AUTO	2
60		051	FADE TO BLACK	1

No	TITLE SEEET SET	REMARK	No	TITLE SEEET SET	REMARK	No	TITLE SEEET SET	REMARK
1	SC31817-00A	BACK COLOR	20	SC31817-00A	EXT KEY	39	SC31817-00A	CENTER
2		KEY MATTE	21		LUM KEY	40		ON
3		DSK MATTE	22		CHROMA KEY	41		BKGD
4		WIPE BORDER	23		PRESET PTN	42		KEY
5		KEY BORDER	24		EDIT ENABLE 7	43		DSK PVW
6		DSK BORDER	25		GPI ENABLE 8	44		MIX
7		MATTE COPY	26		WIPE PTN 9	45		WIPE
8		TEST GEN	27		COLOR MEMORY 4			
9		EXCHG	28		EVENT MEMORY 5			
10		KEY	29		MASK 6			
11		DSK	30		TRANS MIE 1			
12		NORMAL	31		TRANS DSK 2			
13		BORDER	32		TRANS FTB 3			
14		SHADOW	33		*			
15		OUT LINE	34		FADER LIMIT 0			
16		KEY/DSK BOS	35		ENT			
17		MATTE	36		DSK BKGD			
18		B/W	37		AUX 1			
19		SPOT	38		AUX 2			

4.1.5 POWER SWITCH ASSEMBLY
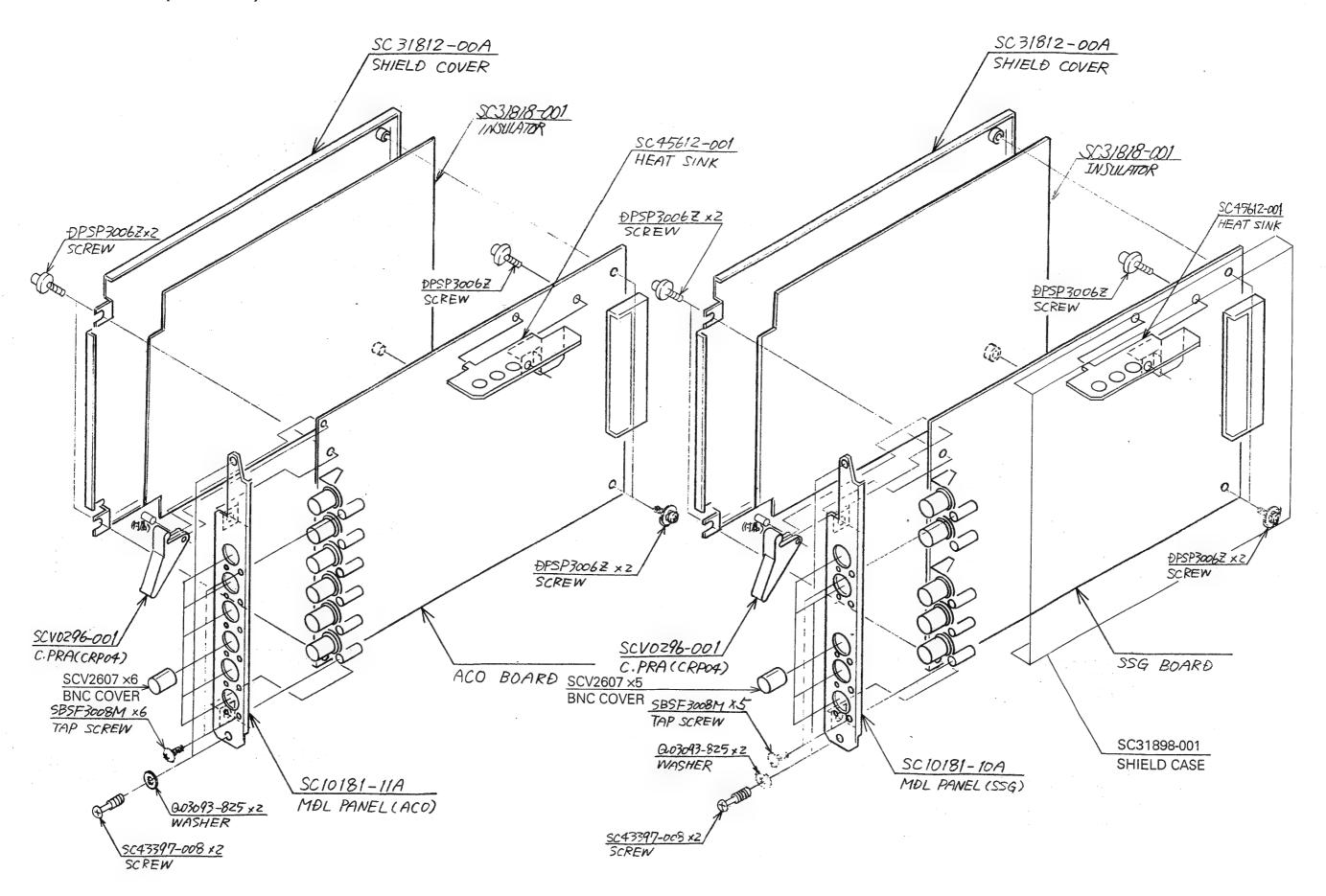
BUS

LED

FADER

ATK

EHT214PH02N04

RED

CN4
CN5
CN3

LED

EHT214PH02N03

CN15

CN7

SS31001-60-29

CN1

SC31207-60-29

EHT212EH12N09

FNC

TEN

EHTD24EH05207

CN12

EHT010EH12N08

CN9

CN8

CN3

CN1 CN2

PHY120PH77Z01

CN9

WRS

PHYD20PH15Z02

RTE

CN8

WPI

CN1

FIP

PJS

CN7

CN2

SS37001-34-12
F CABLE

SC31207-34-30
F CABLE

CN1

CN2
CN3

SC45637-003 X2

QSE2A21-S03
POWER SWITCH

FRONT

BROWN

BROWN

CN4

SC45637-001

SC45637-002

BACK

BLUE

SC45637-007

CN5

CN7

L N

BLUE

SC45637-005

SS37001-60-20

BROWN

CN8

SC45637-004

MIND

P. SW ASS'Y

LUW CLAMP QHX2092-001 x1

KM−5000P (CONTROL UNIT) Assembly list M1

M1MM□□□□

Symbol No.	Part No.	Part Name	Description
	E03619−001	GROUND TERMINAL	
	E47227−006	RUBBER FOOT(CR)	
	GL8KG22	LED	
	MLSC0621	WIRE KIT	
	PGD30011−1	HOUSE MARK	
	PRE2014	SPRING PIN	
	Q03093−825	PLASTIC WASHER	
	QHX2092−001	WIRE CLAMP	
	QSE2A21−S03	SEESAW SWITCH	
	REE2000	E.WASHER	
	SC10182−00A	BOTTOM CASE	
	SC10183−00A	CONTROL PANEL	
	SC10184−001	INDICATOR PANEL	
	SC20565−001	REAR COVER	
	SC20566−001	SCREEN	
	SC31103−001	FADER LEVER	
	SC31207−34−30	F CABLE	
	SC31207−60−29	F CABLE	
	SC31814−001	PANEL SCREEN	
	SC31815−001	FD ESCUTCHEON	
	SC31816−011	TITLE SHEET	
	SC31816−021	TITLE SHEET	
	SC31816−031	TITLE SHEET	
	SC31816−041	TITLE SHEET	
	SC31816−051	TITLE SHEET	
	SC31816−061	TITLE SHEET	
	SC31816−071	TITLE SHEET	
	SC31816−081	TITLE SHEET	
	SC31817−00A	TITLE SHEET	
	SC40725−001	MAGNET RUBBER	
	SC40855−001	E.LABEL	
	SC40913−002	HINGE	
	SC41058−002	CAUTION LABEL	
	SC41252−001	CAUTION LABEL	
	SC43662−001	FADER KNOB	
	SC43663−001	PLATE	
	SC43664−001	BRACKET	
	SC43665−00A	BASE	
	SC43666−001	KEY TOP	
	SC43667−001	RING	
	SC43668−001	BASE	
	SC43669−001	PLATE	
	SC43670−001	PIN	
	SC43859−001	BRACKET	
	SC44141−001	SPRING PLATE	
	SC44142−001	NUT PLATE	
	SC44780−001	LABEL	
	SC45155−001	CUSHION	
	SC45214−031	SHEET	
	SC45291−001	CAP	
	SC45399−002	CUSHION	
	SC45616−001	BRACKET	
	SC45617−001	ENC BRACKET	
	SC45618−001	ESCUTCHEON	
	SC45619−001	PS KNOB	

Symbol No.	Part No.	Part Name	Description
	SC45620−001	HINGE(1)	
	SC45621−00A	HINGE(2)	
	SC45705−032	BENT WASHER	
	SCV1429−301	KNOB	
	SCV1429−401	KNOB	
	SCV1429−901	KNOB	
	SCV1430−001	CAP	
	SCV1431−001	PILOT LAMP	
	SCV1433−102	CAR.V.RESISTOR	
	SCV1508−002	PS P.C.BRD.ASSY	
	SCV2433−001	FIP	
	SCV2434−001	KNOB	
	SCV2435−001	CAP	
	SCV2466−011	PUSH SWITCH	
	SCV2466−021	PUSH SWITCH	
	SCV2605−09SN	DUST COVER	
	SS31001−34−12	F CABLE	
	SS31001−60−20	F CABLE	
	SS31001−60−29	F CABLE	
	SS43621	NAME PLATE	
	SSV0577	LINE FILTER	
	WBS3000N	WASHER	
	DPSP2606Z	SCREW	M2.6×6
	DPSP2608Z	SCREW	M2.6×8
	DPSP3006Z	SCREW	M3×6
	LPSP3008M	SCREW	M3×8
	LPSP4006Z	SCREW	M4×6
	SBSF2606M	SCREW	M2.6×6
	SBSF3008M	SCREW	M3×8
	SBST3008M	SCREW	M3×8
	SDSP3006M	SCREW	M3×6
	SDSP3006R	SCREW	M3×6
	SSSP3006M	SCREW	M3×6
	YRS3004M	SCREW	M3×4
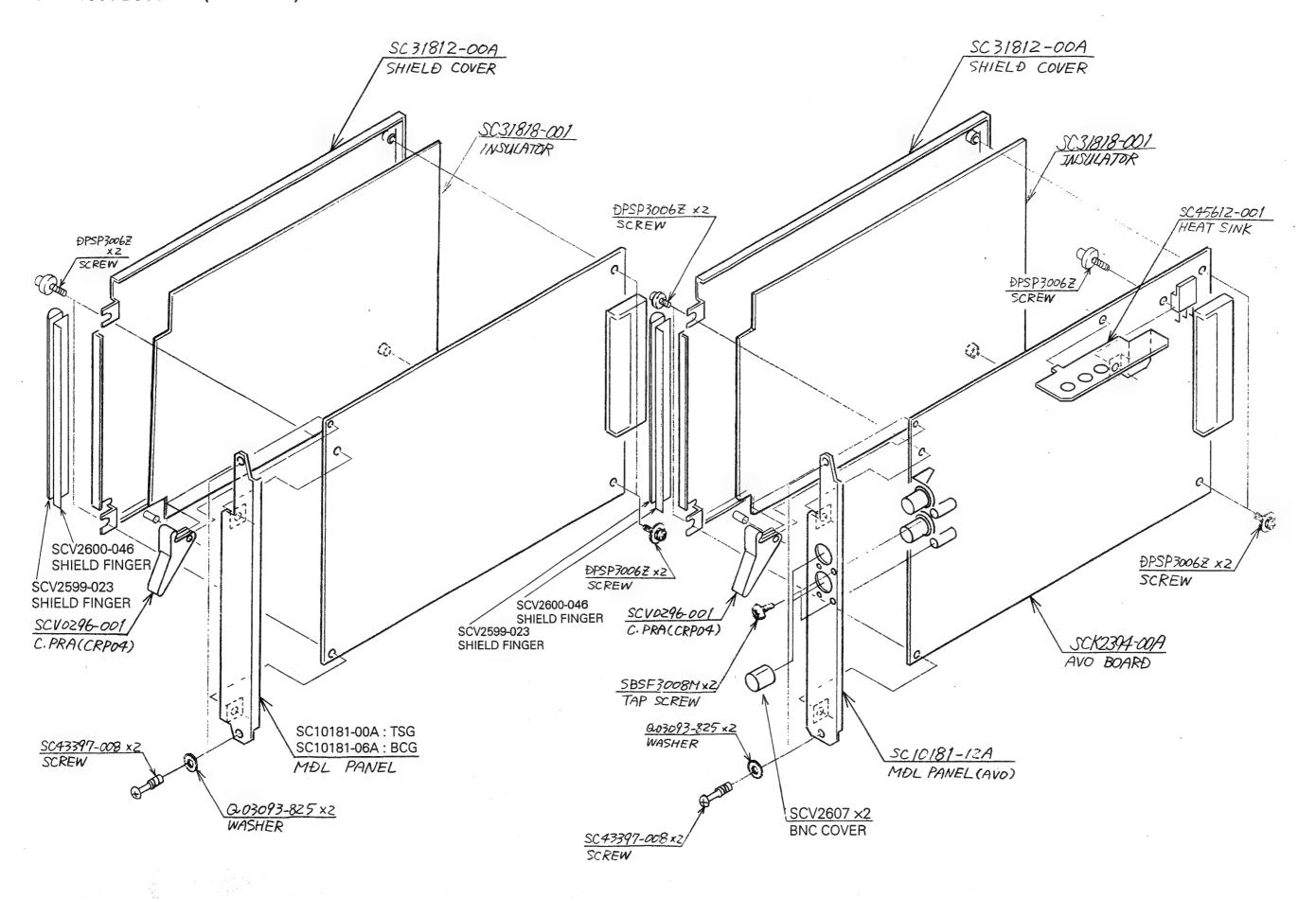
4.2 KM-5000M (MAIN UNIT) ASSEMBLY

4.2.1 FRONT BOARDS ASSEMBLY

ĐPSP 3006Z x6
SCREW

SSV0865 (CPU BOARD한)
BATTERY

SCV 0296-001 x2
C.PRA (CRP04)

BASE

SCA5672-001
TITLE LABEL

BOARD	BASE	TITLE LABEL
CPU BOARD	SC10179-02A	CPU
WF1 BOARD	SC10179-01A	WF1
WF2 BOARD		WF2
ME BOARD		ME
DF BOARD		DF
KEY BOARD		KEY
DSK BOARD	SC10179-01A	DSK

4.2.2 IF BOARD ASSEMBLY

SC20569-011
IF SHIELD

IF BOARD

SCV0296-001
C. PRA(CRP04) ×2

SC45674-001
TALLY LABEL

SCV2605-09SN ×2
DUST COVER

SC20560-00A
IF PANEL

DPSP3206Z
×2

DPSP3006Z
×4

4.2.3 SSG / ACO (KM-BK5011) ASSEMBLY

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

SC45612-001
HEAT SINK

ÐPSP3006Z x2
SCREW

ÐPSP3006Z
SCREW

ÐPSP3006Z x2
SCREW

SCV0296-001
C.PRA (CRP04)

SCV2607 x6
BNC COVER

SBSF3008M x6
TAP SCREW

ÐPSP3006Z x 2
SCREW

ACO BOARD

SC10181-11A
MÐL PANEL (ACO)

Q03093-825 x2
WASHER

SC43397-008 x2
SCREW

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

SC45612-001
HEAT SINK

ÐPSP3006Z
SCREW

ÐPSP3006Z x2
SCREW

SCV0296-001
C.PRA (CRP04)

SCV2607 x5
BNC COVER

SBSF3008M x5
TAP SCREW

Q03093-825 x2
WASHER

SC43397-008 x2
SCREW

SC10181-10A
MÐL PANEL (SSG)

SSG BOARD

SC31898-001
SHIELD CASE

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

DPSP3006Z x2
SCREW

DPSP3006Z
x2
SCREW

SCV2600-046
SHIELD FINGER

SCV2599-023
SHIELD FINGER

SCV0296-001
C.PRA(CRP04)

SC43397-008 x2
SCREW

Q03093-825 x2
WASHER

SC10181-00A : TSG
SC10181-06A : BCG
MDL PANEL

DPSP3006Z x2
SCREW

SCV2600-046
SHIELD FINGER
SCV2599-023
SHIELD FINGER

SCV0296-001
C.PRA(CRP04)

SBSF3008M x2
TAP SCREW

Q03093-825 x2
WASHER

SC43397-008 x2
SCREW

SCV2607 x2
BNC COVER

SC10181-12A
MDL PANEL(AVO)

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

SC45612-001
HEAT SINK

DPSP3006Z
SCREW

DPSP3006Z x2
SCREW

SCK2394-00A
AVO BOARD

DPSP3008N
X12

SC10178-001
PS FRAME

		Part No.
△	F1	QMF51A2-3R15
△	F2	QMF-61MJ-100
△	F3	
△	F4	
△	F5	
△	F6	QMF-61UJ-2R0
△	F7	QMF-61MJ-100

SCV2479-004
TERMINAL BLOCK

LRSP40148
X2

SC45623-001
FUSE LABEL

SCV2438-001
(12V)

5m/m

SCV2469-001
FUSE HOLDER

SSV1118
FUSE HOLDER X6

SCV2437-001
(-5V)

SC45613-001
PS PANEL

X2
SDSP3006M

SCV2436-001
(5V)

SDR-205BRD

SCV2439-001
(9V)

SCV2440-001
POWER SWITCH

4.2.6 GUIDE STRIP ASSEMBLY

SC45633-011
SPRING X14

SC20556-011
ANGLE (A)

DRSP 3006Z (X3)

DRSP 3006Z X2 Ⓐ

SCV1626-001
GUIDE STRIP X14

DRSP 3006Z (X3)

SC20558-001
STOPPER

SC20557-001
ANGLE (B) X2

Ⓐ

ANGLE (2) ASS'Y

SCV1626-001
GUIDE STRIP X14

SC45633-011 X14
SPRING

DRSP 3006Z X2

X14
SCV1626-001
GUIDE STRIP

Ⓐ

SC20558-001
STOPPER

Ⓐ

SC20556-021
ANGLE (A)

Ⓐ

ANGLE (1) ASS'Y

SC45633-021
SPRING X9

SCV1626-001 X23
GUIDE STRIP

DRSP 3006Z X2

Ⓐ

SC20558-001
STOPPER

Ⓐ

TOP FRAME ASS'Y

SCV1626-001
GUIDE STRIP X9

SC45633-021
SPRING X9

SC20555-001
BOTTOM FRAME

BOTTOM FRAME ASS'Y

4.2.7 CENTER FRAME ASSEMBLY

DPSP3006Z X2

SC45614-001 HOLDER

DPSP3006Z X22+2

SC45614-001 HOLDER

DPSP3006Z X2

BUFFER1 BOARD

SC45632-016 SHIELD FINGER X30

JOINT-BUFFER2 BOARD

SC70123-00A CENTRE FRAME

DPSP3006Z X20+4

SC70815-001 FMT SHIELD

SCV2459-001 FMT

SS42497 GROMMET X2

SCV2460-001 RMT

SC70186-001 RMT SHIELD

FMT

RMT

4.2.8 CHASSIS ASSEMBLY

DPSP 4035M x8

DPSP 3008N x4

DPSP 3008N x3

DPSP 3012N

SCV2021-001 FAN MOTOR/120 X2

DPSP 3008N x3

TOP FRAME ASSY

SC40702-001 HANDLE X4

SC31809-011 GUIDE (L)

CENTER FRAME ASSY

QMCB002-001 AC INLET

SCV0801-001 SOCKET COVER

ANGLE (A) (2) ASSY

SC10174-00A SIDE FRAME (L)

SCV1626-001 GUIDE STRIP

SC20559-001 SIDE BRACKET x2

SC44835-001 AC NUT PLATE

ANGLE (A) (1) ASSY

AC INLET ASSY

E03619-001 GND TERMINAL

SBSP 3010N

SCV1626-001 GUIDE STRIP

SC31809-021 GUIDE (R)

LPSP 4008Z X2

LPSP 3008M X8

SCV2442-001 NOISE FILTER

SC40855-001 E·LABEL

SC10176-001 CHASSIS

DPSP3008N x4

DPSP3008N X2

x2 DPSP3008N

DPSP3008N x2

DPSP3008N x3

SC10175-00A SIDE FRAME (R)

BOTTOM FRAME ASSY

DPSP 3006Z X3

DPSP3008N x3

DPSP3008N x4

SC45615-001 BRACKET x2

E47227-004 FOOT ASSY X4

DPSP3008N X2

LPSP 5016Z X4

4.2.9 SIDE ASSEMBLY

JOINT PWB

SC31829-001
SIDE SHIELD (L)

DPSP3006Z
x6

BUFFER 1 PWB

DPSP
3006Z x2

DPSP
3006Z

BUFFER 2

SC31830-001
SIDE SHIELD (R)

DPSP3006Z
x6

4.2.10 COVER ASSEMBLY

SC20561-001
TOP COVER

SC20562-011
SIDE COVER (L)

SDSP
4006R
X4

SDSP
4006R
X4

SC47058-002
CAUTION LABEL

SDSP
4006R
X4

SC20562-021
SIDE COVER (R)

PGD30017-1
HOUSE MARK

422

SC44808-001
WAVE WASHER X4

SCV805-001
FASTENER X4

SC20180-00A
FRONT PANNEL

SC31253-001
ESCUTCHEON

FRONT PANNEL ASSY   ○ DRSP3008N X4   ○ DPSP3008N X14

SC43826-004
NET

HRT08-501F-NT
RYOMEN TAPE

SC45632-016
SHIELD FINGER X10

* SC31810-011
REAR PANEL X2

SC31817-001
BLANK PANNEL X22

IF

SDSP3010N
X44

SC44780-001
WARNING LABEL   SD43621
NAME PLATE

DRSP
3008N
X2

SDSP3010N
SCREW X6

**

SCV2599-023×2

* SCV2599-023×2
SHIELD FINGER

** SCV2599-023×2
SHIELD FINGER

SCV2599-023×2
SHIELD FINGER

KM-5000M (MAIN UNIT) Assembly list M2

M2MM□□□

Symbol No.	Part No.	Part Name	Description
	E03619-001	GROUND TERMINAL	
	E47227-004	FOOT ASSY	
	HRT08-501F-NT	RYOMEN TAPE	
	MLSC0619	WIRE KIT	
	PGD30011-1	HOUSE MARK	
	Q03093-825	PLASTIC WASHER	
	QHX2092-001	WIRE CLAMP	
	QMCB002-001	AC INLET SOCKET	
	QMF51A2-3R15	FUSE	
	QMF61M1-100	FUSE	
	QMF61U1-2R0	FUSE	
	SC10173-00A	CENTER FRAME	
	SC10174-00A	SIDE FRAME(L)	
	SC10175-00A	SIDE FRAME(R)	
	SC10176-001	CHASSIS	
	SC10177-00A	TOP FRAME	
	SC10178-001	PS FRAME	
	SC10179-01A	BASE	
	SC10179-02A	BASE	
	SC10180-00A	FRONT PANEL	
	SC10181-00A	MODULE PANEL	TSG
	SC10181-06A	MODULE PANEL	BCG
	SC10181-10A	MODULE PANEL	SCG
	SC10181-11A	MODULE PANEL	ACO
	SC10181-12A	MODULE PANEL	AVO
	SC10185-001	FMT SHIELD	
	SC10186-001	RMT SHIELD	
	SC20555-001	BOTTOM FRAME	
	SC20556-011	ANGLE(A)	
	SC20556-021	ANGLE(A)	
	SC20557-001	ANGLE(B)	
	SC20558-001	STOPPER	
	SC20559-001	SIDE BRACKET	
	SC20560-00A	IF PANEL	
	SC20561-001	TOP COVER	
	SC20562-011	SIDE COVER	
	SC20562-021	SIDE COVER	
	SC20569-011	IF SHIELD	
	SC31253-001	ESCUTCHEON	
	SC31809-011	GUIDE	
	SC31809-021	GUIDE	
	SC31810-011	REAR PLATE	
	SC31811-001	BLANK PANEL	
	SC31812-00A	SHIELD COVER	
	SC31818-001	INSULATOR	
	SC31829-001	SIDE SHIELD(L)	
	SC31830-001	SIDE SHIELD(R)	
	SC40702-001	HANDLE	
	SC40855-001	E.LABEL	
	SC41058-002	CAUTION LABEL	
	SC41252-001	CAUTION LABEL	
	SC43826-004	NET	
	SC44780-001	LABEL	
	SC44808-001	WAVE WASHER	
	SC44835-001	NUT PLATE	

Symbol No.	Part No.	Part Name	Description
	SC45563-002	SHEET	
	SC45612-001	HEAT SINK	
	SC45613-001	PS PANEL	
	SC45614-001	HOLDER	
	SC45615-001	BRACKET	
	SC45632-016	SHIELD FINGER	
	SC45633-011	SPRING	
	SC45633-021	SPRING	
	SC45672-001	TITLE LABEL	
	SC45673-001	FUSE LABEL	
	SC45674-001	TALLY LABEL	
	SCV0296-001	LEVER	
	SCV0801-001	SOCKET COVER	
	SCV1626-001	GUIDE	
	SCV1805-001	FASTENER	
	SCV2027-001	FAN MOTOR/80	
	SCV2436-001	SWITCHING REGUL	
	SCV2437-001	SWITCHING REGUL	
	SCV2438-001	SWITCHING REGUL	
	SCV2439-001	SWITCHING REGUL	
	SCV2440-001	SWITCH	
	SCV2442-001	NOISE FILTER	
	SCV2459-001	FMT	
	SCV2460-001	RMT	
	SCV2469-001	FUSE HOLDER	
	SCV2479-004	TERMINAL BLOCK	
	SCV2599-023	SHIELD FINGER	
	SCV2600-046	SHIELD FINGER	
	SCV2605-09SN	DUST COVER	
	SCV2607	BNC COVER	
	SDB-205BRD(BR)	L.E.D.	
	SS42497	GROMMET	
	SS43621	NAME PLATE	
	SSV0865	NI-CD BATTERY	
	SSV1118	FUSE HOLDER	
	DPSP3006Z	SCREW	M3×6
	DPSP3008N	SCREW	M3×8
	DPSP4035M	SCREW	M4×35
	LPSP3008M	SCREW	M3×8
	LPSP4006Z	SCREW	M4×6
	LPSP4014Z	SCREW	M4×14
	LPSP5016Z	SCREW	M5×16
	SBSF3008M	SCREW	M3×8
	SC43397-008	SCREW	
	SDSP3006M	SCREW	M3×6
	SDSP3010N	SCREW	M3×10
	SDSP4006R	SCREW	M4×6
	SSSP5012N	SCREW	M5×12
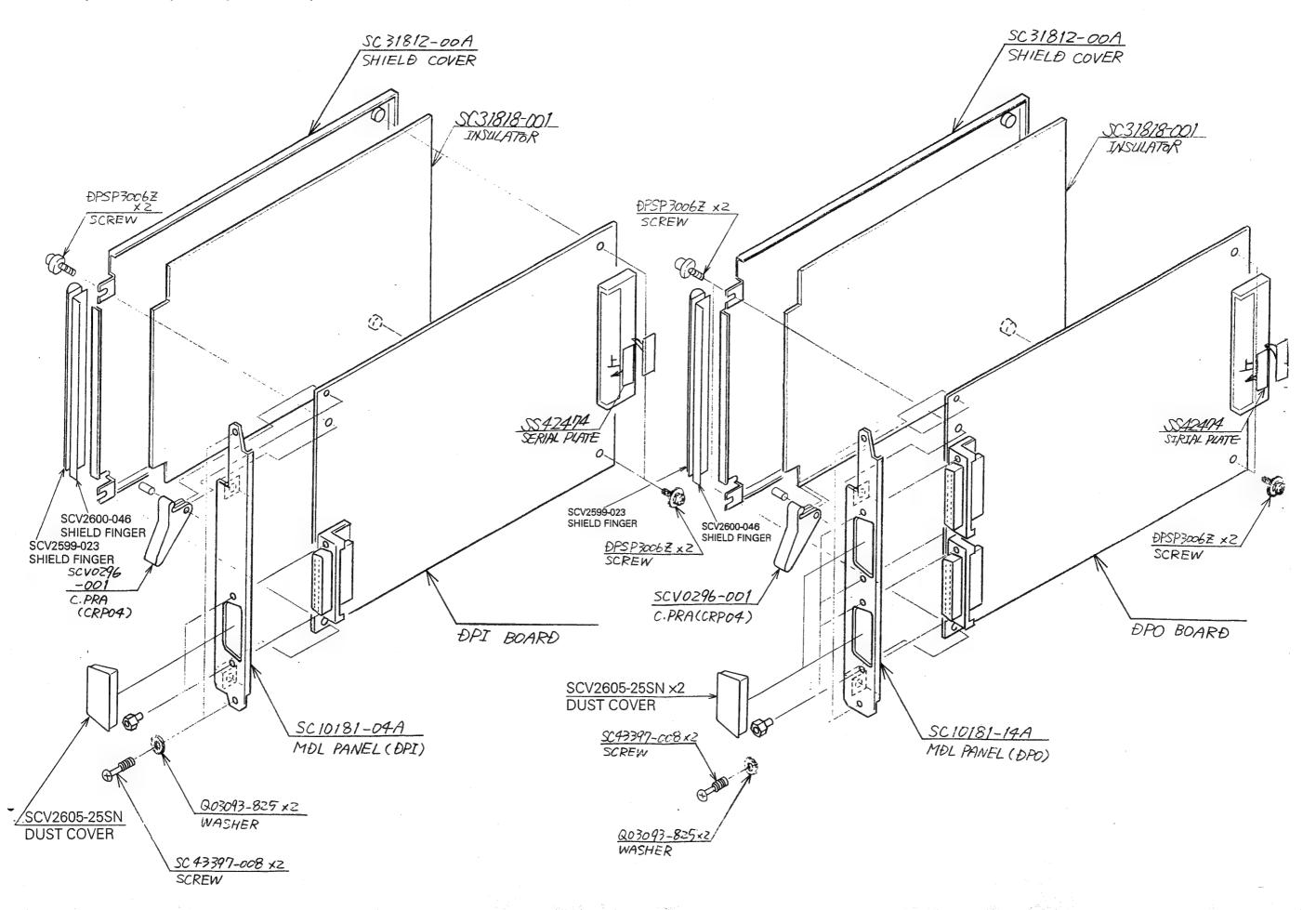
4.3 ACI (KM-BK5001) / AVI (KM-BK5002) / DSI (KM-BK5003) / AKI (KM-BK5005) /
DSO (KM-BK5013) / AKO (KM-BK5015) ASSEMBLY (OPTIONAL)

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

DPSP3006Z x2
SCREW

SC45612-001
HEAT SINK
EXCEPT DSI
BOARD

DPSP3006Z x2
SCREW

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

SC45612-001
HEAT SINK
ONLY ACI BOARD

DPSP3006Z x2
SCREW

DPSP3006Z
SCREW
EXCEPT DSI
BOARD

(AKO94)
SC45563-002
SHEET

SS42474
SERIAL PLATE

DPSP3006Z
SCREW
ONLY ACI
BOARD

SS42474
SERIAL PLATE

SCV2600-046
SHIELD FINGER

SCV2599-023
SHIELD FINGER

SCV0296-001
C.PRA (CRP04)

SBSF3008M x2
TAP SCREW

SCV2607
BNC COVER

Q03093-825 x4
WASHER

SC43397-008 x4
SCREW

DPSP3006Z x2
SCREW

SCV2600-046
SHIELD FINGER

SCV2599-023
SHIELD FINGER

SCV0296-001
C.PRA (CRP04)

SBSF3008M x3
TAP SCREW

SCV2607 x3
BNC COVER

Q03093-825 x2
WASHER

SC43397-008 x2
SCREW

DPSP3006Z x2
SCREW

SC10181-02A : AVI
SC10181-03A : DSI
SC10181-05A : AKI
SC10181-15A : AKO

MDL PANEL

SC10181-13A : DSO
SC10181-01A : ACI

MDL PANEL

ACI (KM−BK5001)/AVI (KM−BK5002)/DSI (KM−BK5003)/AKI (KM−BK5005)/DSO (KM−BK5013)/ AKO (KM−BK5015) Assembly list (OPTIONAL) Ⓜ3   Ⓜ3ⓂⓂ☐☐☐

Symbol No.	Part No.	Part Name	Description
	Q03093-825	PLASTIC WASHER	
	SC10181-01A	MODULE PANEL	ACI
	SC10181-02A	MODULE PANEL	AVI
	SC10181-03A	MODULE PANEL	DSI
	SC10181-05A	MODULE PANEL	AKI
	SC10181-13A	MODULE PANEL	DSO
	SC10181-15A	MODULE PANEL	AKO
	SC31812-00A	SHIELD COVER	
	SC31818-001	INSULATOR	
	SC45563-002	SHEET	
	SC45612-001	HEAT SINK	
	SCV0296-001	LEVER	
	SCV2599-023	SHIELD FINGER	
	SCV2600-046	SHIELD FINGER	
	SCV2607	BNC COVER	
	DPSP3006Z	SCREW	M3×6
	SBSF3008M	SCREW	M3×8
	SC43397-008	SCREW	

4.4 DPI (KM-BK5004) / DPO (KM-BK5014) ASSEMBLY (OPTIONAL)

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

DPSP3006Z
×2
SCREW

DPSP3006Z ×2
SCREW

SC31812-00A
SHIELD COVER

SC31818-001
INSULATOR

SS42474
SERIAL PLATE

SCV2600-046
SHIELD FINGER

SCV2599-023
SHIELD FINGER

SCV0296
-001
C.PRA
(CRP04)

SCV2599-023
SHIELD FINGER

DPSP3006Z ×2
SCREW

SCV2600-046
SHIELD FINGER

SCV0296-001
C.PRA(CRP04)

SS42404
SERIAL PLATE

DPSP3006Z ×2
SCREW

DPI BOARD

DPO BOARD

SCV2605-25SN ×2
DUST COVER

SCV2605-25SN
DUST COVER

SC43397-008 ×2
SCREW

SC10181-04A
MDL PANEL (DPI)

Q03093-825 ×2
WASHER

SC43397-008 ×2
SCREW

SC43397-008 ×2
SCREW

Q03093-825 ×2
WASHER

SC10181-14A
MDL PANEL (DPO)

DPI (KM-BK5004)/DPO (KM-BK5014) Assembly list (OPTIONAL) M4

M4MM☐☐☐

Symbol No.	Part No.	Part Name	Description
	Q03093–825	PLASTIC WASHER	
	SC10181–04A	MODULE PANEL	
	SC10181–14A	MODULE PANEL	
	SC31812–00A	SHIELD COVER	
	SC31818–001	INSULATOR	
	SCV0296–001	LEVER	
	SCV2599–023	SHIELD FINGER	
	SCV2600–046	SHIELD FINGER	
	SCV2605–25SN	DUST COVER	
	DPSP3006Z	SCREW	M3×6
	SC43397–008	SCREW	

SECTION 5
ELECTRICAL PARTS LIST

5-1

SAFETY PRECAUTION:
Parts identified by the ⚠ symbol are critical for safety. Replace only with specified parts numbers.
For maximum reliability and performance, all other replacement parts should be identical to those specified.

NOTE:
• Parts not denoted by parts numbers are not supplied by JVC.
• Abbreviations in this list are as follows:

RESISTORS

In the "Description" column:
All resistance values are in ohms (Ω).
K expresses kilo-ohm (1 000 ohms, kΩ).
M expresses mega-ohm (10^6 ohms, MΩ).

In the "Parts Name" column:
COMP. RESISTOR   : Composition Resistor
U.F. RESISTOR   : Non-inflammable Resistor
O.M.F. RESISTOR : Oxide Metalized Film Resistor
FUSI. RESISTOR   : Fusible Resistor
M.P. RESISTOR   : Metal Plate Resistor
M.G. RESISTOR   : Metal Graze Resistor
M.F. RESISTOR   : Metal Film Resistor
W.W. RESISTOR   : Wire Wound Resistor

CAPACITORS

In the "Description" column:
All capacitance values are in microfarad (μF) unless
otherwise indicated.
P expresses picofarad (10^{-12} farad, pF).

In the "Parts Name" column:
TRIM. CAPACITOR : Trimmer Capacitor
CER. CAPACITOR : Ceramic Capacitor
E. CAPACITOR   : Electrolytic Capacitor
TAN. CAPACITOR : Tantalum Capacitor
MPP CAPACITOR   : Metalized Polypropylene
                         Capacitor
O.F. CAPACITOR   : Oil Film Capacitor
MPF CAPACITOR   : Metalized Polyfilm Capacitor
F.M. CAPACITOR   : Film Mica Capacitor
P.P. CAPACITOR   : Polypropylene Capacitor
P.S. CAPACITOR   : Polystyrene Capacitor

5.1 FNC board assembly list ◌①
SCK1131-04-00A ◌①☐☐☐☐☐☐

Symbol No.	Part No.	Part Name	Description		Symbol No.	Part No.	Part Name	Description
IC1	TD62083CP	I.C.(M)	TOSHIBA		S18	SCV2466-001	PUSH SWITCH	DSK
IC2	P16V8Q-15-0015	I.C.(M)	AMD		S19	SCV2466-001	PUSH SWITCH	EXT
IC2	SCV1205-020	IC SOCKET	20PIN		S20	SCV2466-001	PUSH SWITCH	LUM
IC3	TD62083CP	I.C.(M)	TOSHIBA					
IC4	P16V8Q-15-0016	I.C.(M)	AMD		S21	SCV2466-001	PUSH SWITCH	CHROM
IC4	SCV1205-020	IC SOCKET	20PIN		S22	SCV2466-001	PUSH SWITCH	PST PTN
IC5	TD62083CP	I.C.(M)	TOSHIBA		S23	SCV2466-001	PUSH SWITCH	WAVE GEN
D1	MA165	DIODE	MATSUSHITA		CN8	SSV1209-S10	CONNECTOR	10PIN
D2	MA165	DIODE	MATSUSHITA		CN12	SC42462-060	CONNECTOR	60PIN
D3	MA165	DIODE	MATSUSHITA					
D4	MA165	DIODE	MATSUSHITA					
D5	MA165	DIODE	MATSUSHITA					
D6	MA165	DIODE	MATSUSHITA					
D7	MA165	DIODE	MATSUSHITA					
D8	MA165	DIODE	MATSUSHITA					
D9	MA165	DIODE	MATSUSHITA					
D10	MA165	DIODE	MATSUSHITA					
D11	MA165	DIODE	MATSUSHITA					
D12	MA165	DIODE	MATSUSHITA					
D13	MA165	DIODE	MATSUSHITA					
D14	MA165	DIODE	MATSUSHITA					
D15	MA165	DIODE	MATSUSHITA					
D16	MA165	DIODE	MATSUSHITA					
D17	MA165	DIODE	MATSUSHITA					
D18	MA165	DIODE	MATSUSHITA					
D19	MA165	DIODE	MATSUSHITA					
D20	MA165	DIODE	MATSUSHITA					
D21	MA165	DIODE	MATSUSHITA					
D22	MA165	DIODE	MATSUSHITA					
D23	MA165	DIODE	MATSUSHITA					
RA1	QRB085J-103	RESISTOR ARRAY	10K					
C1	QEX41AM-106	E.CAPACITOR	10 10V					
C2	QEX41AM-106	E.CAPACITOR	10 10V					
C3	QEX41AM-106	E.CAPACITOR	10 10V					
C4	QEX41AM-106	E.CAPACITOR	10 10V					
C5	QEX41AM-106	E.CAPACITOR	10 10V					
C6	QEX41AM-106	E.CAPACITOR	10 10V					
S1	SCV2466-001	PUSH SWITCH	BACK COLOR					
S2	SCV2466-001	PUSH SWITCH	KEY MAT					
S3	SCV2466-001	PUSH SWITCH	DSK MAT					
S4	SCV2466-001	PUSH SWITCH	EXCHG					
S5	SCV2466-001	PUSH SWITCH	NOR					
S6	SCV2466-001	PUSH SWITCH	BORDER					
S7	SCV2466-001	PUSH SWITCH	SHADOW					
S8	SCV2466-001	PUSH SWITCH	OUT LINE					
S9	SCV2466-001	PUSH SWITCH	WIPE BORDER					
S10	SCV2466-001	PUSH SWITCH	KEY BORDER					
S11	SCV2466-001	PUSH SWITCH	DSK BORDER					
S12	SCV2466-001	PUSH SWITCH	KEY					
S13	SCV2466-001	PUSH SWITCH	SELF					
S14	SCV2466-001	PUSH SWITCH	MAT					
S15	SCV2466-001	PUSH SWITCH	B/W					
S16	SCV2466-001	PUSH SWITCH	SPOT					
S17	SCV2466-001	PUSH SWITCH	MAT COPY					

5.2 RTE board assembly list ⓪②
SCK1131-05-00A

Symbol No.	Part No.	Part Name	Description
S1	SCV1405-001	ROTARY ENCODER	RE1
S2	SCV1405-001	ROTARY ENCODER	RE2
S3	SCV1405-001	ROTARY ENCODER	RE3
S4	SCV1405-001	ROTARY ENCODER	RE4
CN8	SSV1209-S10	CONNECTOR	10PIN

5.3 TEN board assembly list ⓪③
SCK1132-01-00A

Symbol No.	Part No.	Part Name	Description	
IC1	TC74HC540AP	I.C.(M)	TOSHIBA	
IC2	TD62083CP	I.C.(M)	TOSHIBA	
IC3	TC74HC4514AP	I.C.(M)	TOSHIBA	
IC4	TD62083CP	I.C.(M)	TOSHIBA	
IC5	TD62083CP	I.C.(M)	TOSHIBA	
IC6	TC74HC4543AP	I.C.(M)	TOSHIBA	
IC7	P16V8Q-15-0017	I.C.(M)	AMD	
IC7	SCV1205-020	IC SOCKET	20PIN	
IC8	TD62083CP	I.C.(M)	TOSHIBA	
IC9	TD62083CP	I.C.(M)	TOSHIBA	
Q1	2SA838(C)	TRANSISTOR	MATSUSHITA	
Q2	2SA838(C)	TRANSISTOR	MATSUSHITA	
Q3	2SA838(C)	TRANSISTOR	MATSUSHITA	
Q4	2SA838(C)	TRANSISTOR	MATSUSHITA	
Q5	2SA838(C)	TRANSISTOR	MATSUSHITA	
Q6	2SA838(C)	TRANSISTOR	MATSUSHITA	
Q7	2SA838(C)	TRANSISTOR	MATSUSHITA	
Q8	2SC1570NP(F)	TRANSISTOR	SANYO	
D1	MA165	DIODE	MATSUSHITA	
D2	MA165	DIODE	MATSUSHITA	
D3	MA165	DIODE	MATSUSHITA	
D4	MA165	DIODE	MATSUSHITA	
D5	MA165	DIODE	MATSUSHITA	
D6	MA165	DIODE	MATSUSHITA	
D7	MA165	DIODE	MATSUSHITA	
D8	MA165	DIODE	MATSUSHITA	
D9	MA165	DIODE	MATSUSHITA	
D10	MA165	DIODE	MATSUSHITA	
D11	MA165	DIODE	MATSUSHITA	
D12	MA165	DIODE	MATSUSHITA	
D13	MA165	DIODE	MATSUSHITA	
D14	MA165	DIODE	MATSUSHITA	
D15	MA165	DIODE	MATSUSHITA	
D16	MA165	DIODE	MATSUSHITA	
D17	MA165	DIODE	MATSUSHITA	
D18	MA165	DIODE	MATSUSHITA	
D19	MA165	DIODE	MATSUSHITA	
LD1	LT9230H	L.E.D.		
LD2	LT9230H	L.E.D.		
LD3	LT9230H	L.E.D.		
LD4	LT9230H	L.E.D.		
LD5	LT9230D1	L.E.D.		
R1	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R2	QRD161J-103	CARBON RESISTOR	10K	1/6W
R3	QRD161J-680	CARBON RESISTOR	68	1/6W
R4	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R5	QRD161J-103	CARBON RESISTOR	10K	1/6W
R6	QRD161J-680	CARBON RESISTOR	68	1/6W
R7	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R8	QRD161J-103	CARBON RESISTOR	10K	1/6W
R9	QRD161J-680	CARBON RESISTOR	68	1/6W
R10	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R11	QRD161J-103	CARBON RESISTOR	10K	1/6W
R12	QRD161J-680	CARBON RESISTOR	68	1/6W
R13	QRD161J-472	CARBON RESISTOR	4.7K	1/6W

Symbol No.	Part No.	Part Name	Description	
R14	QRD161J-103	CARBON RESISTOR	10K	1/6W
R15	QRD161J-680	CARBON RESISTOR	68	1/6W
R16	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R17	QRD161J-103	CARBON RESISTOR	10K	1/6W
R18	QRD161J-680	CARBON RESISTOR	68	1/6W
R19	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R20	QRD161J-103	CARBON RESISTOR	10K	1/6W
R21	QRD161J-680	CARBON RESISTOR	68	1/6W
R22	QRD161J-331	CARBON RESISTOR	330	1/6W
R23	QRD161J-331	CARBON RESISTOR	330	1/6W
R24	QRD161J-331	CARBON RESISTOR	330	1/6W
R25	QRD161J-331	CARBON RESISTOR	330	1/6W
R26	QRD161J-331	CARBON RESISTOR	330	1/6W
R27	QRD161J-331	CARBON RESISTOR	330	1/6W
R28	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R29	QRD161J-103	CARBON RESISTOR	10K	1/6W
R30	QRD161J-331	CARBON RESISTOR	330	1/6W
R31	QRD161J-331	CARBON RESISTOR	330	1/6W
R32	QRD161J-331	CARBON RESISTOR	330	1/6W
R33	QRD161J-331	CARBON RESISTOR	330	1/6W
R34	QRD161J-331	CARBON RESISTOR	330	1/6W
R35	QRD161J-331	CARBON RESISTOR	330	1/6W
R36	QRD161J-331	CARBON RESISTOR	330	1/6W
R37	QRD161J-331	CARBON RESISTOR	330	1/6W
R38	QRD161J-331	CARBON RESISTOR	330	1/6W
R39	QRD161J-103	CARBON RESISTOR	10K	1/6W
RA1	QRB085J-103	RESISTOR ARRAY	10K	
C1	QEX41AM-106	E.CAPACITOR	10	10V
C2	QEX41AM-106	E.CAPACITOR	10	10V
C4	QEX41AM-106	E.CAPACITOR	10	10V
C5	QEX41AM-106	E.CAPACITOR	10	10V
C6	QEX41AM-106	E.CAPACITOR	10	10V
C7	QEX41AM-106	E.CAPACITOR	10	10V
C8	QEX41AM-106	E.CAPACITOR	10	10V
C9	QEX41AM-106	E.CAPACITOR	10	10V
C10	QEX41AM-106	E.CAPACITOR	10	10V
S1	SCV2466-001	PUSH SWITCH	7	
S2	SCV2466-001	PUSH SWITCH	8	
S3	SCV2466-001	PUSH SWITCH	9	
S4	SCV2466-001	PUSH SWITCH	4	
S5	SCV2466-001	PUSH SWITCH	5	
S6	SCV2466-001	PUSH SWITCH	6	
S7	SCV2466-001	PUSH SWITCH	1	
S8	SCV2466-001	PUSH SWITCH	2	
S9	SCV2466-001	PUSH SWITCH	3	
S10	SCV2466-001	PUSH SWITCH	*	
S11	SCV2466-001	PUSH SWITCH	0	
S12	SCV2466-001	PUSH SWITCH	ENT	
S13	SCV2466-001	PUSH SWITCH	DSK BKGD	
S14	SCV2466-001	PUSH SWITCH	AUX1	
S15	SCV2466-001	PUSH SWITCH	AUX2	
S16	SCV2466-001	PUSH SWITCH	BKGD	
S17	SCV2466-001	PUSH SWITCH	KEY	
S18	SCV2466-001	PUSH SWITCH	DSK PVW	
S19	SCV2466-001	PUSH SWITCH	MIX	
S20	SCV2466-001	PUSH SWITCH	WIPE	

Symbol No.	Part No.	Part Name	Description
CN1	SSV1591-L11	CONNECTOR	11PIN
CN2	SSV1591-L15	CONNECTOR	15PIN
CN9	SSV1209-S12	CONNECTOR	12PIN
CN13	SC42462-060	CONNECTOR	60PIN

5.4 WPI board assembly list [0][4]
SCK1132-02-00A

[0][4][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description	
LD1	LT-9210H	L.E.D.		
LD2	LT-9210H	L.E.D.		
LD3	LT-9210H	L.E.D.		
LD4	LT-9210H	L.E.D.		
LD5	LT-9210H	L.E.D.		
LD6	LT-9210H	L.E.D.		
LD7	LT-9210H	L.E.D.		
LD8	LT-9210H	L.E.D.		
LD9	LT-9210H	L.E.D.		
LD10	LT-9210H	L.E.D.		
LD11	LT-9210H	L.E.D.		
LD12	LT-9210H	L.E.D.		
LD13	LT-9210H	L.E.D.		
LD14	LT-9210H	L.E.D.		
LD15	LT-9210H	L.E.D.		
LD16	GL8S030	LED		
LD17	GL8S030	LED		
LD18	GL8S030	LED		
R1	QRD161J-221	CARBON RESISTOR	220	1/6W
R2	QRD161J-221	CARBON RESISTOR	220	1/6W
R3	QRD161J-221	CARBON RESISTOR	220	1/6W
R4	QRD161J-221	CARBON RESISTOR	220	1/6W
CN1	SSV1591-L11	CONNECTOR	11PIN	
CN2	SSV1591-L15	CONNECTOR	15PIN	

5.5 WPS board assembly list [0][5]
SCK1131-03-00A

[0][5][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description
D1	MA165	DIODE	MATSUSHITA
D2	MA165	DIODE	MATSUSHITA
D3	MA165	DIODE	MATSUSHITA
D4	MA165	DIODE	MATSUSHITA
D5	MA165	DIODE	MATSUSHITA
D6	MA165	DIODE	MATSUSHITA
D7	MA165	DIODE	MATSUSHITA
D8	MA165	DIODE	MATSUSHITA
D9	MA165	DIODE	MATSUSHITA
S1	SCV0292-100	PUSH SWITCH	DEC
S2	SCV0292-100	PUSH SWITCH	INC
S3	SCV0292-100	PUSH SWITCH	
S4	SCV0292-100	PUSH SWITCH	
S5	SCV0292-100	PUSH SWITCH	
S6	SCV0292-100	PUSH SWITCH	
S7	SCV0292-100	PUSH SWITCH	
S8	SCV2466-001	PUSH SWITCH	CENTER
S9	SCV2466-001	PUSH SWITCH	POS ON
CN9	SSV1209-S12	CONNECTOR	12PIN

5.6 ATK board assembly list [0][6]
SCK1131-01-00A

[0][6][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description	
IC1	TL062CP	I.C.(M)	TEXAS	
IC2	TD62083CP	I.C.(M)	TOSHIBA	
D1	MA165	DIODE	MATSUSHITA	
D2	MA165	DIODE	MATSUSHITA	
D3	MA165	DIODE	MATSUSHITA	
D4	MA165	DIODE	MATSUSHITA	
D5	MA165	DIODE	MATSUSHITA	
R1	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R2	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R3	QRD161J-221	CARBON RESISTOR	220	1/6W
R4	QRD161J-221	CARBON RESISTOR	220	1/6W
R5	QRV141F-47R0	M.F.RESISTOR	47.0	1/4W
R6	QRV141F-47R0	M.F.RESISTOR	47.0	1/4W
R7	QRV141F-47R0	M.F.RESISTOR	47.0	1/4W
C1	QEX41AM-106	E.CAPACITOR	10	10V
C2	QEX41AM-106	E.CAPACITOR	10	10V
C3	QEX41AM-106	E.CAPACITOR	10	10V
C4	QEX41AM-106	E.CAPACITOR	10	10V
C5	QCZ0206-104	CER.CAPACITOR	0.10	
S1	SCV1428-001	PUSH SWITCH	FADE TO BLACK	
S2	SCV1428-001	PUSH SWITCH	EFF CUT	
S3	SCV1428-001	PUSH SWITCH	DSK CUT	
S4	SCV1428-001	PUSH SWITCH	EFF AUTO	
S5	SCV1428-001	PUSH SWITCH	DSK AUTO	
CN3	SSV1209-L02	CONNECTOR	2PIN	
CN4	SSV1209-L02	CONNECTOR	2PIN	
CN5	SSV1209-L03	CONNECTOR	3PIN	
CN7	SSV1209-L05	CONNECTOR	5PIN	
CN15	SC42462-034	CONNECTOR	34PIN	

5.7 PJS board assembly list [0][7]
SCK1131-02-00A

[0][7][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description	
VR1	SCV1406	JOY STICK	10K	
C1	QEX41AM-106	E.CAPACITOR	10	10V
C2	QEX41AM-106	E.CAPACITOR	10	10V
CN7	SSV1209-S05	CONNECTOR	5PIN	

5.8 BUS board assembly list [0][8]
SCK1130–00A [0][8][ ][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description			Symbol No.	Part No.	Part Name	Description		
IC1	TC74HC4515AP	I.C.(M)	TOSHIBA			D37	MA165	DIODE	MATSUSHITA		
IC2	BA6212	I.C.(M)	ROHM			D38	MA165	DIODE	MATSUSHITA		
IC3	BA6212	I.C.(M)	ROHM			D39	MA165	DIODE	MATSUSHITA		
IC4	TC74HC4515AP	I.C.(M)	TOSHIBA			D40	MA165	DIODE	MATSUSHITA		
IC5	BA6212	I.C.(M)	ROHM								
IC6	BA6212	I.C.(M)	ROHM			D41	MA165	DIODE	MATSUSHITA		
IC7	TC74HC4515AP	I.C.(M)	TOSHIBA			D42	MA165	DIODE	MATSUSHITA		
IC8	BA6212	I.C.(M)	ROHM			D43	MA165	DIODE	MATSUSHITA		
IC9	BA6212	I.C.(M)	ROHM			D44	MA165	DIODE	MATSUSHITA		
IC10	TC74HC4515AP	I.C.(M)	TOSHIBA			D45	MA165	DIODE	MATSUSHITA		
						D46	MA165	DIODE	MATSUSHITA		
IC11	BA6212	I.C.(M)	ROHM			D47	MA165	DIODE	MATSUSHITA		
IC12	BA6212	I.C.(M)	ROHM			D48	MA165	DIODE	MATSUSHITA		
						D49	MA165	DIODE	MATSUSHITA		
						D50	MA165	DIODE	MATSUSHITA		
Q1	2SA838(C)	TRANSISTOR	MATSUSHITA								
Q2	2SC1570NP(F)	TRANSISTOR	SANYO			D51	MA165	DIODE	MATSUSHITA		
Q3	2SA838(C)	TRANSISTOR	MATSUSHITA			D52	MA165	DIODE	MATSUSHITA		
Q4	2SC1570NP(F)	TRANSISTOR	SANYO			D53	MA165	DIODE	MATSUSHITA		
Q5	2SA838(C)	TRANSISTOR	MATSUSHITA			D54	MA165	DIODE	MATSUSHITA		
Q6	2SC1570NP(F)	TRANSISTOR	SANYO			D55	MA165	DIODE	MATSUSHITA		
Q7	2SA838(C)	TRANSISTOR	MATSUSHITA			D56	MA165	DIODE	MATSUSHITA		
Q8	2SC1570NP(F)	TRANSISTOR	SANYO			D57	MA165	DIODE	MATSUSHITA		
Q9	2SC1570NP(F)	TRANSISTOR	SANYO			D58	MA165	DIODE	MATSUSHITA		
						D59	MA165	DIODE	MATSUSHITA		
D1	MA165	DIODE	MATSUSHITA								
D2	MA165	DIODE	MATSUSHITA			R1	QRD161J–472	CARBON RESISTOR	4.7K	1/6W	
D3	MA165	DIODE	MATSUSHITA			R2	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D4	MA165	DIODE	MATSUSHITA			R3	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D5	MA165	DIODE	MATSUSHITA			R4	QRD161J–102	CARBON RESISTOR	1.0K	1/6W	
D6	MA165	DIODE	MATSUSHITA			R5	QRV141F–56R0	M.F.RESISTOR	56.0	1/4W	
D7	MA165	DIODE	MATSUSHITA			R6	QRV141F–47R0	M.F.RESISTOR	47.0	1/4W	
D8	MA165	DIODE	MATSUSHITA			R7	QRD161J–472	CARBON RESISTOR	4.7K	1/6W	
D9	MA165	DIODE	MATSUSHITA			R8	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D10	MA165	DIODE	MATSUSHITA			R9	QRD161J–103	CARBON RESISTOR	10K	1/6W	
						R10	QRD161J–102	CARBON RESISTOR	1.0K	1/6W	
D11	MA165	DIODE	MATSUSHITA								
D12	MA165	DIODE	MATSUSHITA			R11	QRV141F–56R0	M.F.RESISTOR	56.0	1/4W	
D13	MA165	DIODE	MATSUSHITA			R12	QRV141F–47R0	M.F.RESISTOR	47.0	1/4W	
D14	MA165	DIODE	MATSUSHITA			R13	QRD161J–472	CARBON RESISTOR	4.7K	1/6W	
D15	MA165	DIODE	MATSUSHITA			R14	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D16	MA165	DIODE	MATSUSHITA			R15	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D17	MA165	DIODE	MATSUSHITA			R16	QRD161J–102	CARBON RESISTOR	1.0K	1/6W	
D18	MA165	DIODE	MATSUSHITA			R17	QRV141F–56R0	M.F.RESISTOR	56.0	1/4W	
D19	MA165	DIODE	MATSUSHITA			R18	QRV141F–47R0	M.F.RESISTOR	47.0	1/4W	
D20	MA165	DIODE	MATSUSHITA			R19	QRD161J–472	CARBON RESISTOR	4.7K	1/6W	
						R20	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D21	MA165	DIODE	MATSUSHITA								
D22	MA165	DIODE	MATSUSHITA			R21	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D23	MA165	DIODE	MATSUSHITA			R22	QRD161J–102	CARBON RESISTOR	1.0K	1/6W	
D24	MA165	DIODE	MATSUSHITA			R23	QRV141F–56R0	M.F.RESISTOR	56.0	1/4W	
D25	MA165	DIODE	MATSUSHITA			R24	QRV141F–47R0	M.F.RESISTOR	47.0	1/4W	
D26	MA165	DIODE	MATSUSHITA			R25	QRD161J–472	CARBON RESISTOR	4.7K	1/6W	
D27	MA165	DIODE	MATSUSHITA			R26	QRD161J–103	CARBON RESISTOR	10K	1/6W	
D28	MA165	DIODE	MATSUSHITA								
D29	MA165	DIODE	MATSUSHITA								
D30	MA165	DIODE	MATSUSHITA			C1	QEX41CM–156	E.CAPACITOR	15	16V	
						C2	QEX41CM–156	E.CAPACITOR	15	16V	
D31	MA165	DIODE	MATSUSHITA			C3	QEX41CM–156	E.CAPACITOR	15	16V	
D32	MA165	DIODE	MATSUSHITA			C4	QEX41CM–156	E.CAPACITOR	15	16V	
D33	MA165	DIODE	MATSUSHITA			C5	QEX41CM–156	E.CAPACITOR	15	16V	
D34	MA165	DIODE	MATSUSHITA			C6	QEX41CM–156	E.CAPACITOR	15	16V	
D35	MA165	DIODE	MATSUSHITA			C7	QEX41CM–156	E.CAPACITOR	15	16V	
D36	MA165	DIODE	MATSUSHITA			C8	QEX41CM–156	E.CAPACITOR	15	16V	

Symbol No.	Part No.	Part Name	Description	
C9	QEX41CM-156	E.CAPACITOR	15	16V
C10	QEX41CM-156	E.CAPACITOR	15	16V
C11	QEX41CM-156	E.CAPACITOR	15	16V
C12	QEX41CM-156	E.CAPACITOR	15	16V
C13	QEX41CM-156	E.CAPACITOR	15	16V
S1	SCV1428-001	PUSH SWITCH	AUX-BLACK	
S2	SCV1428-001	PUSH SWITCH	AUX-1	
S3	SCV1428-001	PUSH SWITCH	AUX-2	
S4	SCV1428-001	PUSH SWITCH	AUX-3	
S5	SCV1428-001	PUSH SWITCH	AUX-4	
S6	SCV1428-001	PUSH SWITCH	AUX-5	
S7	SCV1428-001	PUSH SWITCH	AUX-6	
S8	SCV1428-001	PUSH SWITCH	AUX-7	
S9	SCV1428-001	PUSH SWITCH	AUX-8	
S10	SCV1428-001	PUSH SWITCH	AUX-9	
S11	SCV1428-001	PUSH SWITCH	AUX-10	
S12	SCV1428-001	PUSH SWITCH	AUX-11	
S13	SCV1428-001	PUSH SWITCH	AUX-12	
S14	SCV1428-001	PUSH SWITCH	AUX-BACKCOLOR	
S15	SCV1428-001	PUSH SWITCH	AUX-M/E	
S16	SCV1428-001	PUSH SWITCH	AUX-PRV	
S17	SCV1428-001	PUSH SWITCH	AUX-PGM	
S18	SCV1428-001	PUSH SWITCH	KEY-BLACK	
S19	SCV1428-001	PUSH SWITCH	KEY-1	
S20	SCV1428-001	PUSH SWITCH	KEY-2	
S21	SCV1428-001	PUSH SWITCH	KEY-3	
S22	SCV1428-001	PUSH SWITCH	KEY-4	
S23	SCV1428-001	PUSH SWITCH	KEY-5	
S24	SCV1428-001	PUSH SWITCH	KEY-6	
S25	SCV1428-001	PUSH SWITCH	KEY-7	
S26	SCV1428-001	PUSH SWITCH	KEY-8	
S27	SCV1428-001	PUSH SWITCH	KEY-9	
S28	SCV1428-001	PUSH SWITCH	KEY-10	
S29	SCV1428-001	PUSH SWITCH	KEY-11	
S30	SCV1428-001	PUSH SWITCH	KEY-12	
S31	SCV1428-001	PUSH SWITCH	KEY-BACKCOLOR	
S32	SCV1428-001	PUSH SWITCH	PGM-BLACK	
S33	SCV1428-001	PUSH SWITCH	PGM-1	
S34	SCV1428-001	PUSH SWITCH	PGM-2	
S35	SCV1428-001	PUSH SWITCH	PGM-3	
S36	SCV1428-001	PUSH SWITCH	PGM-4	
S37	SCV1428-001	PUSH SWITCH	PGM-5	
S38	SCV1428-001	PUSH SWITCH	PGM-6	
S39	SCV1428-001	PUSH SWITCH	PGM-7	
S40	SCV1428-001	PUSH SWITCH	PGM-8	
S41	SCV1428-001	PUSH SWITCH	PGM-9	
S42	SCV1428-001	PUSH SWITCH	PGM-10	
S43	SCV1428-001	PUSH SWITCH	PGM-11	
S44	SCV1428-001	PUSH SWITCH	PGM-12	
S45	SCV1428-001	PUSH SWITCH	PGM-BACKCOLOR	
S46	SCV1428-001	PUSH SWITCH	PST-BLACK	
S47	SCV1428-001	PUSH SWITCH	PST-1	
S48	SCV1428-001	PUSH SWITCH	PST-2	
S49	SCV1428-001	PUSH SWITCH	PST-3	
S50	SCV1428-001	PUSH SWITCH	PST-4	
S51	SCV1428-001	PUSH SWITCH	PST-5	
S52	SCV1428-001	PUSH SWITCH	PST-6	

Symbol No.	Part No.	Part Name	Description
S53	SCV1428-001	PUSH SWITCH	PST-7
S54	SCV1428-001	PUSH SWITCH	PST-8
S55	SCV1428-001	PUSH SWITCH	PST-9
S56	SCV1428-001	PUSH SWITCH	PST-10
S57	SCV1428-001	PUSH SWITCH	PST-11
S58	SCV1428-001	PUSH SWITCH	PST-12
S59	SCV1428-001	PUSH SWITCH	PST-BACKCOLOR
CN1	SC42462-060	CONNECTOR	60PIN

5.9 MIND board assembly list ⓪⑨

SCK1129-00A   ⓪⑨▢▢▢▢▢▢

Symbol No.	Part No.	Part Name	Description		
IC1	TMP82C79P-2(B)	I.C.(M)	TOSHIBA		
IC2	TC74HC138AP	I.C.(M)	TOSHIBA		
IC3	TMP82C79P-2(B)	I.C.(M)	TOSHIBA		
IC4	TC74HC138AP	I.C.(M)	TOSHIBA		
IC5	TC4584BP	I.C.(M)	TOSHIBA		
IC6	TC4584BP	I.C.(M)	TOSHIBA		
IC7	TC74HCU04AP	I.C.(M)	TOSHIBA		
IC8	P16V8Q-15-0011	I.C.(M)	AMD		
IC8	SCV1205-020	IC SOCKET	20PIN		
IC9	P16V8Q-15-0012	I.C.(M)	AMD		
IC9	SCV1205-020	IC SOCKET	20PIN		
IC10	TC4011BP	I.C.(M)	TOSHIBA		
IC11	HD26LS31P	I.C.(M)	HITACHI		
IC12	HD75188P	I.C.(M)	HITACHI		
IC13	P16V8Q-15-0013	I.C.(M)	AMD		
IC13	SCV1205-020	IC SOCKET	20PIN		
IC14	P16V8Q-15-0013	I.C.(M)	AMD		
IC14	SCV1205-020	IC SOCKET	20PIN		
IC15	TMPZ84C015BF-8	I.C.(M)	TOSHIBA		
IC16	TC74HC245AP	I.C.(M)	TOSHIBA		
IC17	TC74HC245AP	I.C.(M)	TOSHIBA		
IC18	TC74HC245AP	I.C.(M)	TOSHIBA		
IC19	TC74HC245AP	I.C.(M)	TOSHIBA		
IC20	TC74HC245AP	I.C.(M)	TOSHIBA		
IC21	HD26LS32P	I.C.(M)	HITACHI		
IC22	TC74HC74AP	I.C.(M)	TOSHIBA		
IC23	TC74HC74AP	I.C.(M)	TOSHIBA		
IC24	TC74HC393AP	I.C.(M)	TOSHIBA		
IC25	TC74HC245AP	I.C.(M)	TOSHIBA		
IC26	TC74HC245AP	I.C.(M)	TOSHIBA		
IC27	TC74HC245AP	I.C.(M)	TOSHIBA		
IC28	TC74HC245AP	I.C.(M)	TOSHIBA		
IC29	TC74HC245AP	I.C.(M)	TOSHIBA		
IC30	TC74HC74AP	I.C.(M)	TOSHIBA		
IC31	PLSC1091	I.C.(M)	MBM27C512-20CZ		
IC31	SSV0235	IC SOCKET			
IC32	TC55257BPL-10	I.C.(M)	TOSHIBA		
IC32	SSV0235	IC SOCKET			
IC33	SSV0235	IC SOCKET			
IC34	TC74HC245AP	I.C.(M)	TOSHIBA		
IC35	UPD71055C	I.C.(M)	NEC		
IC36	UPD71055C	I.C.(M)	NEC		
IC37	UPD71055C	I.C.(M)	NEC		
IC38	UPD71055C	I.C.(M)	NEC		
IC39	HA17012PC	I.C.(M)	HITACHI		
IC40	TC4051BP	I.C.(M)	TOSHIBA		
IC41	NJM082D	I.C.(M)	JRC		
IC42	NJM2903D	I.C.(M)	JRC		
IC43	HD75189P	I.C.(M)	HITACHI		
IC44	NJM082D	I.C.(M)	JRC		
IC45	TA78L005AP	I.C.(M)	TOSHIBA		
IC46	TA78L009AP	I.C.(M)	TOSHIBA		
IC47	NJM79L09A-T3	I.C.(M)	JRC		
IC48	SCV1207-040	IC SOCKET	40PIN		
Q1	2SC1570NP(F)	TRANSISTOR	SANYO		
Q2	2SA838(C)	TRANSISTOR	MATSUSHITA		
Q3	2SC1570NP(F)	TRANSISTOR	SANYO		
Q4	2SC1570NP(F)	TRANSISTOR	SANYO		
Q5	2SC1570NP(F)	TRANSISTOR	SANYO		
Q6	2SC1570NP(F)	TRANSISTOR	SANYO		
Q7	2SC1570NP(F)	TRANSISTOR	SANYO		
D1	MA165	DIODE	MATSUSHITA		
D2	GZA3.3(Y)	ZENER DIODE	SANYO		
D3	MA165	DIODE	MATSUSHITA		
D4	MA165	DIODE	MATSUSHITA		
D5	MA165	DIODE	MATSUSHITA		
R1	QRD161J-101	CARBON RESISTOR	100	1/6W	
R2	QRD161J-473	CARBON RESISTOR	47K	1/6W	
R3	QRD161J-223	CARBON RESISTOR	22K	1/6W	
R4	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R5	QRD161J-471	CARBON RESISTOR	470	1/6W	
R6	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R7	QRD161J-222	CARBON RESISTOR	2.2K	1/6W	
R9	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R10	QRD161J-560	CARBON RESISTOR	56	1/6W	
R11	QRD161J-101	CARBON RESISTOR	100	1/6W	
R12	QRD161J-101	CARBON RESISTOR	100	1/6W	
R13	QRD161J-105	CARBON RESISTOR	1.0M	1/6W	
R14	QRD161J-101	CARBON RESISTOR	100	1/6W	
R15	QRD161J-101	CARBON RESISTOR	100	1/6W	
R16	QRD161J-101	CARBON RESISTOR	100	1/6W	
R17	QRD161J-101	CARBON RESISTOR	100	1/6W	
R18	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R20	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R21	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R22	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R23	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R24	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R25	QRD161J-223	CARBON RESISTOR	22K	1/6W	
R26	QRD161J-223	CARBON RESISTOR	22K	1/6W	
R27	QRD161J-223	CARBON RESISTOR	22K	1/6W	
R28	QRD161J-223	CARBON RESISTOR	22K	1/6W	
R29	QRD161J-223	CARBON RESISTOR	22K	1/6W	
R30	QRD161J-223	CARBON RESISTOR	22K	1/6W	
R31	QRD161J-101	CARBON RESISTOR	100	1/6W	
R32	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R33	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R34	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R35	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R36	QRD161J-681	CARBON RESISTOR	680	1/6W	
R37	QRD161J-563	CARBON RESISTOR	56K	1/6W	
R38	QRD161J-681	CARBON RESISTOR	680	1/6W	
R39	QRD161J-272	CARBON RESISTOR	2.7K	1/6W	
R40	QRD161J-272	CARBON RESISTOR	2.7K	1/6W	
R41	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R42	QRD161J-822	CARBON RESISTOR	8.2K	1/6W	
R43	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R44	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R45	QRD161J-103	CARBON RESISTOR	10K	1/6W	
R46	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R47	QRD161J-222	CARBON RESISTOR	2.2K	1/6W	
R48	QRD161J-101	CARBON RESISTOR	100	1/6W	
R49	QRD161J-101	CARBON RESISTOR	100	1/6W	
R50	QRD161J-101	CARBON RESISTOR	100	1/6W	

Symbol No.	Part No.	Part Name	Description		Symbol No.	Part No.	Part Name	Description	
R51	QRD161J-101	CARBON RESISTOR	100	1/6W	C30	QFN41HJ-102	MYLAR CAPACITOR	1000P	50V
R52	QRD161J-101	CARBON RESISTOR	100	1/6W					
					C31	QFN41HJ-102	MYLAR CAPACITOR	1000P	50V
R53	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	C32	QEX41CM-156	E.CAPACITOR	15	16V
R54	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W	C33	QEX41CM-156	E.CAPACITOR	15	16V
R55	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W	C34	QEX41CM-156	E.CAPACITOR	15	16V
R56	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W	C35	QEX41CM-156	E.CAPACITOR	15	16V
R57	QRD161J-103	CARBON RESISTOR	10K	1/6W	C36	QEX41CM-156	E.CAPACITOR	15	16V
R58	QRD161J-103	CARBON RESISTOR	10K	1/6W	C37	QEX41CM-156	E.CAPACITOR	15	16V
R59	QRD161J-103	CARBON RESISTOR	10K	1/6W	C38	QEX41CM-156	E.CAPACITOR	15	16V
R60	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	C39	QEX41CM-156	E.CAPACITOR	15	16V
R61	QRD161J-220	CARBON RESISTOR	22	1/6W	C40	QEX41CM-156	E.CAPACITOR	15	16V
					C41	QEX41CM-156	E.CAPACITOR	15	16V
VR1	QVPB609-103	TRIM RESISTOR	10K	FADR DY RNG	C42	QEX41CM-156	E.CAPACITOR	15	16V
VR2	QVPB609-502	TRIM RESISTOR	5K	FADR LV OFST	C43	QEX41CM-156	E.CAPACITOR	15	16V
					C44	QEX41CM-156	E.CAPACITOR	15	16V
					C45	QEX41CM-156	E.CAPACITOR	15	16V
RA1	QRB085J-103	RESISTOR ARRAY	10K		C46	QEX41CM-156	E.CAPACITOR	15	16V
RA2	QRB085J-103	RESISTOR ARRAY	10K		C47	QEX41CM-156	E.CAPACITOR	15	16V
RA3	QRB085J-103	RESISTOR ARRAY	10K		C48	QEX41CM-156	E.CAPACITOR	15	16V
RA4	QRB085J-103	RESISTOR ARRAY	10K		C49	QCS11HJ-150	CER.CAPACITOR	15P	50V
RA5	QRB085J-103	RESISTOR ARRAY	10K		C50	QCS11HJ-220	CER.CAPACITOR	22P	50V
RA6	QRB085J-103	RESISTOR ARRAY	10K						
RA7	QRB085J-103	RESISTOR ARRAY	10K		C51	QCS11HJ-220	CER.CAPACITOR	22P	50V
RA8	QRB085J-103	RESISTOR ARRAY	10K		C52	QETA1EM-226	E.CAPACITOR	22	25V
RA9	QRB085J-103	RESISTOR ARRAY	10K		C53	QCS11HJ-101	CER.CAPACITOR	100P	50V
RA10	QRB045J-103	RESISTOR ARRAY	10K		C54	QEX41CM-156	E.CAPACITOR	15	16V
					C55	QEX41CM-156	E.CAPACITOR	15	16V
RA11	QRB045J-103	RESISTOR ARRAY	10K		C56	QEX41CM-156	E.CAPACITOR	15	16V
RA12	QRB085J-103	RESISTOR ARRAY	10K		C57	QFN41HJ-103	MYLAR CAPACITOR	0.010	50V
RA13	QRB085J-103	RESISTOR ARRAY	10K		C58	QCZ0206-104	CER.CAPACITOR	0.10	
					C59	QCZ0206-104	CER.CAPACITOR	0.10	
					C60	QCZ0206-104	CER.CAPACITOR	0.10	
C1	QEX41CM-156	E.CAPACITOR	15	16V					
C2	QEX41CM-156	E.CAPACITOR	15	16V	C61	QCZ0206-104	CER.CAPACITOR	0.10	
C3	QEX41CM-156	E.CAPACITOR	15	16V	C62	QCZ0206-104	CER.CAPACITOR	0.10	
C4	QETA1EM-107	E.CAPACITOR	100	25V	C63	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QETA1EM-107	E.CAPACITOR	100	25V					
C6	QEX41CM-156	E.CAPACITOR	15	16V					
C7	QETA1EM-107	E.CAPACITOR	100	25V	LC1	EXC-EMT271BC	EMI FILTER		
C8	QER41HM-105	E.CAPACITOR	1.0	50V	LC2	EXC-EMT271BC	EMI FILTER		
C9	QEX41CM-156	E.CAPACITOR	15	16V	LC3	EXC-EMT271BC	EMI FILTER		
C10	QEX41CM-156	E.CAPACITOR	15	16V	LC4	EXC-EMT271BC	EMI FILTER		
					LC5	EXC-EMT271BC	EMI FILTER		
C11	QEX41CM-156	E.CAPACITOR	15	16V	LC6	EXC-EMT271BC	EMI FILTER		
C12	QEX41CM-156	E.CAPACITOR	15	16V	LC7	EXC-EMT271BC	EMI FILTER		
C13	QEX41CM-156	E.CAPACITOR	15	16V	LC8	EXC-EMT271BC	EMI FILTER		
C14	QEX41CM-156	E.CAPACITOR	15	16V	LC9	EXC-EMT271BC	EMI FILTER		
C15	QCS11HJ-220	CER.CAPACITOR	22P	50V	LC10	EXC-EMT271BC	EMI FILTER		
C16	QCS11HJ-100	CER.CAPACITOR	10P	50V					
C17	QEX41CM-156	E.CAPACITOR	15	16V	LC11	EXC-EMT271BC	EMI FILTER		
C18	QEX41CM-156	E.CAPACITOR	15	16V	LC12	EXC-EMT271BC	EMI FILTER		
C19	QEX41CM-156	E.CAPACITOR	15	16V	LC13	EXC-EMT271BC	EMI FILTER		
C20	QEX41CM-156	E.CAPACITOR	15	16V	LC14	EXC-EMT271BC	EMI FILTER		
					LC15	EXC-EMT271BC	EMI FILTER		
C21	QEX41CM-156	E.CAPACITOR	15	16V	LC16	EXC-EMT271BC	EMI FILTER		
C22	QEX41CM-156	E.CAPACITOR	15	16V	LC17	EXC-EMT271BC	EMI FILTER		
C23	QEX41CM-156	E.CAPACITOR	15	16V	LC18	EXC-EMT271BC	EMI FILTER		
C24	QEX41CM-156	E.CAPACITOR	15	16V	LC19	EXC-EMT271BC	EMI FILTER		
C25	SMV2209-104	E.CAPACITOR	0.1		LC20	EXC-EMT271BC	EMI FILTER		
C26	QFN41HJ-102	MYLAR CAPACITOR	1000P	50V					
C27	QFN41HJ-102	MYLAR CAPACITOR	1000P	50V	LC21	EXC-EMT271BC	EMI FILTER		
C28	QFN41HJ-102	MYLAR CAPACITOR	1000P	50V	LC22	EXC-EMT271BC	EMI FILTER		
C29	QFN41HJ-102	MYLAR CAPACITOR	1000P	50V	LC23	EXC-EMT271BC	EMI FILTER		

Symbol No.	Part No.	Part Name	Description
LC24	EXC-EMT271BC	EMI FILTER	
LC25	EXC-EMT271BC	EMI FILTER	
LC26	EXC-EMT271BC	EMI FILTER	
LC27	EXC-EMT271BC	EMI FILTER	
LC28	EXC-EMT271BC	EMI FILTER	
LC29	EXC-EMT271BC	EMI FILTER	
LC30	EXC-EMT271BC	EMI FILTER	
LC31	EXC-EMT271BC	EMI FILTER	
LC32	EXC-EMT271BC	EMI FILTER	
LC33	EXC-EMT271BC	EMI FILTER	
LC34	EXC-EMT271BC	EMI FILTER	
LC35	EXC-EMT271BC	EMI FILTER	
LC36	EXC-EMT271BC	EMI FILTER	
LC37	EXC-EMT271BC	EMI FILTER	
LC38	EXC-EMT271BC	EMI FILTER	
LC39	EXC-EMT271BC	EMI FILTER	
LC40	EXC-EMT271BC	EMI FILTER	
LC41	EXC-EMT271BC	EMI FILTER	
LC42	EXC-EMT271BC	EMI FILTER	
LC43	EXC-EMT271BC	EMI FILTER	
LC44	EXC-EMT271BC	EMI FILTER	
LC45	EXC-EMT271BC	EMI FILTER	
LC46	EXC-EMT271BC	EMI FILTER	
LC47	EXC-EMT271BC	EMI FILTER	
LC48	EXC-EMT271BC	EMI FILTER	
LC49	EXC-EMT271BC	EMI FILTER	
LC50	EXC-EMT271BC	EMI FILTER	
LC51	EXC-EMT271BC	EMI FILTER	
LC52	EXC-EMT271BC	EMI FILTER	
LC53	EXC-EMT271BC	EMI FILTER	
LC54	EXC-EMT271BC	EMI FILTER	
LC55	EXC-EMT271BC	EMI FILTER	
LC56	EXC-EMT271BC	EMI FILTER	
LC57	EXC-EMT271BC	EMI FILTER	
LC58	EXC-EMT271BC	EMI FILTER	
LC59	EXC-EMT271BC	EMI FILTER	
LC60	EXC-EMT271BC	EMI FILTER	
LC61	EXC-EMT271BC	EMI FILTER	
LC62	EXC-EMT271BC	EMI FILTER	
LC63	EXC-EMT271BC	EMI FILTER	
LC64	EXC-EMT271BC	EMI FILTER	
LC65	EXC-EMT271BC	EMI FILTER	
LC66	EXC-EMT271BC	EMI FILTER	
LC67	EXC-EMT271BC	EMI FILTER	
LC68	EXC-EMT271BC	EMI FILTER	
LC69	EXC-EMT271BC	EMI FILTER	
LC70	EXC-EMT271BC	EMI FILTER	
LC71	EXC-EMT271BC	EMI FILTER	
LC72	EXC-EMT271BC	EMI FILTER	
LC73	EXC-EMT271BC	EMI FILTER	
LC74	EXC-EMT271BC	EMI FILTER	
LC75	EXC-EMT271BC	EMI FILTER	
LC76	EXC-EMT271BC	EMI FILTER	
LC77	EXC-EMT271BC	EMI FILTER	
LC78	EXC-EMT271BC	EMI FILTER	
LC79	EXC-EMT271BC	EMI FILTER	
LC80	EXC-EMT271BC	EMI FILTER	
LC81	EXC-EMT271BC	EMI FILTER	
LC82	EXC-EMT271BC	EMI FILTER	

Symbol No.	Part No.	Part Name	Description
LC83	EXC-EMT271BC	EMI FILTER	
LC84	EXC-EMT271BC	EMI FILTER	
LC85	EXC-EMT271BC	EMI FILTER	
LC86	EXC-EMT271BC	EMI FILTER	
LC87	EXC-EMT271BC	EMI FILTER	
LC88	EXC-EMT271BC	EMI FILTER	
LC89	EXC-EMT271BC	EMI FILTER	
LC90	EXC-EMT271BC	EMI FILTER	
LC91	EXC-EMT271BC	EMI FILTER	
LC92	EXC-EMT271BC	EMI FILTER	
LC93	EXC-EMT271BC	EMI FILTER	
LC94	EXC-EMT271BC	EMI FILTER	
LC95	EXC-EMT271BC	EMI FILTER	
LC96	EXC-EMT271BC	EMI FILTER	
LC97	EXC-EMT271BC	EMI FILTER	
LC98	EXC-EMT271BC	EMI FILTER	
LC99	EXC-EMT271BC	EMI FILTER	
LC100	EXC-EMT271BC	EMI FILTER	
LC101	EXC-EMT271BC	EMI FILTER	
LC102	EXC-EMT271BC	EMI FILTER	
LC103	EXC-EMT271BC	EMI FILTER	
LC104	EXC-EMT271BC	EMI FILTER	
LC105	EXC-EMT271BC	EMI FILTER	
LC106	EXC-EMT271BC	EMI FILTER	
LC107	EXC-EMT271BC	EMI FILTER	
LC108	EXC-EMT271BC	EMI FILTER	
LC109	EXC-EMT271BC	EMI FILTER	
LC110	EXC-EMT271BC	EMI FILTER	
LC111	EXC-EMT271BC	EMI FILTER	
LC112	EXC-EMT271BC	EMI FILTER	
LC113	EXC-EMT271BC	EMI FILTER	
LC114	EXC-EMT271BC	EMI FILTER	
LC115	EXC-EMT271BC	EMI FILTER	
LC116	EXC-EMT271BC	EMI FILTER	
LC117	EXC-EMT271BC	EMI FILTER	
LC118	EXC-EMT271BC	EMI FILTER	
LC119	EXC-EMT271BC	EMI FILTER	
LC120	EXC-EMT271BC	EMI FILTER	
LC121	EXC-EMT271BC	EMI FILTER	
LC122	EXC-EMT271BC	EMI FILTER	
LC123	EXC-EMT271BC	EMI FILTER	
LC124	EXC-EMT271BC	EMI FILTER	
LC125	EXC-EMT271BC	EMI FILTER	
LC126	EXC-EMT271BC	EMI FILTER	
LC127	EXC-EMT271BC	EMI FILTER	
LC128	EXC-EMT271BC	EMI FILTER	
LC129	EXC-EMT271BC	EMI FILTER	
LC130	EXC-EMT271BC	EMI FILTER	
LC131	EXC-EMT271BC	EMI FILTER	
LC132	EXC-EMT271BC	EMI FILTER	
LC133	EXC-EMT271BC	EMI FILTER	
LC134	EXC-EMT271BC	EMI FILTER	
LC135	EXC-EMT271BC	EMI FILTER	
LC136	EXC-EMT271BC	EMI FILTER	
LC137	EXC-EMT271BC	EMI FILTER	
LC138	EXC-EMT271BC	EMI FILTER	
LC139	EXC-EMT271BC	EMI FILTER	
LC140	EXC-EMT271BC	EMI FILTER	
LC141	EXC-EMT271BC	EMI FILTER	

Symbol No.	Part No.	Part Name	Description
LC142	EXC-EMT271BC	EMI FILTER	
LC143	EXC-EMT271BC	EMI FILTER	
LC144	EXC-EMT271BC	EMI FILTER	
LC145	EXC-EMT271BC	EMI FILTER	
LC146	EXC-EMT271BC	EMI FILTER	
LC147	EXC-EMT271BC	EMI FILTER	
LC148	EXC-EMT271BC	EMI FILTER	
LC149	EXC-EMT271BC	EMI FILTER	
LC150	EXC-EMT271BC	EMI FILTER	
LC151	EXC-EMT271BC	EMI FILTER	
LC152	EXC-EMT271BC	EMI FILTER	
LC153	EXC-EMT271BC	EMI FILTER	
X1	SSV0387	CRYSTAL	4.9152MHz
X2	SCV2465	CRYSTAL	16MHz
S1	SCV0516-A18JB2	TOGGLE SWITCH	RESET
S2	SSV0997-4100	SWITCH	DEBUG
S3	SSV0997-4100	SWITCH	DEBUG
S11	SCV2451-001	SWITCH	
S12	SCV2451-001	SWITCH	
S13	SCV2451-001	SWITCH	RS422/RS232C
S14	SCV2451-001	SWITCH	RS422/RS232C
S15	SCV2451-001	SWITCH	RS422/RS232C
S16	SCV2451-001	SWITCH	RS422/RS232C
CN1	SSV1283-003	CONNECTOR	3PIN
CN2	SC42462-034	CONNECTOR	34PIN
CN3	SC42462-060	CONNECTOR	60PIN
CN4	SSV1209-S12	CONNECTOR	12PIN
CN5	SC42462-060	CONNECTOR	60PIN
CN6	SCV1469-S09	CONNECTOR	D-SUB 9 PIN
CN7	SC42462-060	CONNECTOR	60PIN
CN8	SC42462-034	CONNECTOR	34PIN
TP1	SQMX001-001	TEST POINT	
TP2	SQMX001-001	TEST POINT	
TP3	SQMX001-001	TEST POINT	
BZ1	SSV0275	BUZZER	

Symbol No.	Part No.	Part Name	Description
IC1	TMPZ84C015BF-8	I.C.(M)	TOSHIBA
IC2	TC74HCU04AP	I.C.(M)	TOSHIBA
IC3	TC74HC393AP	I.C.(M)	TOSHIBA
IC4	P16V8Q-15-0002	I.C.(M)	AMD
IC4	SCV1205-020	IC SOCKET	20PIN
IC5	TC74HC245AP	I.C.(M)	TOSHIBA
IC6	TC74HC245AP	I.C.(M)	TOSHIBA
IC7	TC74HC245AP	I.C.(M)	TOSHIBA
IC8	P22V10H25-0006	I.C.(M)	AMD
IC8	SCV1205-024	IC SOCKET	24PIN
IC9	TMPZ84C40AP-8	I.C.(M)	TOSHIBA
IC10	PLSC1090	I.C.(M)	MBM27C512-20CZ
IC10	SSV0235	IC SOCKET	28PIN
IC11	TC55257BPL-10	I.C.(M)	TOSHIBA
IC12	TC74HC574AP	I.C.(M)	TOSHIBA
IC13	TC74HC574AP	I.C.(M)	TOSHIBA
IC14	TC55257BPL-10	I.C.(M)	TOSHIBA
IC15	UPD71055C	I.C.(M)	NEC
IC16	UPD71055C	I.C.(M)	NEC
IC17	UPD71055C	I.C.(M)	NEC
IC18	TC5068BP	I.C.(M)	TOSHIBA
IC19	TC5068BP	I.C.(M)	TOSHIBA
IC20	TC74HC245AP	I.C.(M)	TOSHIBA
IC21	TC74HC74AP	I.C.(M)	TOSHIBA
IC22	TC74HC245AP	I.C.(M)	TOSHIBA
IC23	TC74HC245AP	I.C.(M)	TOSHIBA
IC24	TC74HC245AP	I.C.(M)	TOSHIBA
IC25	TC74HC245AP	I.C.(M)	TOSHIBA
IC26	SCV1207-040	IC SOCKET	40PIN
IC27	TC5068BP	I.C.(M)	TOSHIBA
IC28	TC5068BP	I.C.(M)	TOSHIBA
IC29	TC5068BP	I.C.(M)	TOSHIBA
IC30	TC5068BP	I.C.(M)	TOSHIBA
IC31	TC5068BP	I.C.(M)	TOSHIBA
IC32	SSV0235	IC SOCKET	
IC33	PLSC1099	I.C.(M)	MBM27C512-20CZ
IC33	SSV0235	IC SOCKET	28PIN
Q1	2SA838(C)	TRANSISTOR	MATSUSHITA
Q2	2SC1570NP(F)	TRANSISTOR	SANYO
Q3	2SC1570NP(F)	TRANSISTOR	SANYO
Q4	2SC1570NP(F)	TRANSISTOR	SANYO
Q5	2SC1570NP(F)	TRANSISTOR	SANYO
Q6	2SC1570NP(F)	TRANSISTOR	SANYO
Q7	2SC1570NP(F)	TRANSISTOR	SANYO
D1	MA165	DIODE	MATSUSHITA
D2	GZA3.3(Y)	ZENER DIODE	SANYO
D3	MA165	DIODE	MATSUSHITA
D4	MA165	DIODE	MATSUSHITA
D5	MA165	DIODE	MATSUSHITA
LD1	GL8S030	LED	
LD2	GL8S030	LED	
LD3	GL8S030	LED	
LD4	GL8S030	LED	
LD5	GL8S030	LED	
LD6	GL8S030	LED	
LD7	GL8S030	LED	

Symbol No.	Part No.	Part Name	Description	
R1	QRD161J-101	CARBON RESISTOR	100	1/6W
R2	QRD161J-473	CARBON RESISTOR	47K	1/6W
R3	QRD161J-223	CARBON RESISTOR	22K	1/6W
R4	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R5	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R6	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R7	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R9	QRD161J-101	CARBON RESISTOR	100	1/6W
R10	QRD161J-103	CARBON RESISTOR	10K	1/6W
R11	QRD161J-560	CARBON RESISTOR	56	1/6W
R12	QRD161J-101	CARBON RESISTOR	100	1/6W
R13	QRD161J-105	CARBON RESISTOR	1.0M	1/6W
R14	QRD161J-101	CARBON RESISTOR	100	1/6W
R15	QRD161J-101	CARBON RESISTOR	100	1/6W
R16	QRD161J-101	CARBON RESISTOR	100	1/6W
R17	QRD161J-101	CARBON RESISTOR	100	1/6W
R18	QRD161J-103	CARBON RESISTOR	10K	1/6W
R19	QRD161J-103	CARBON RESISTOR	10K	1/6W
R21	QRD161J-103	CARBON RESISTOR	10K	1/6W
R22	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R23	QRD161J-332	CARBON RESISTOR	3.3K	1/6W
R24	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R25	QRD161J-332	CARBON RESISTOR	3.3K	1/6W
R26	QRD161J-101	CARBON RESISTOR	100	1/6W
R27	QRD161J-103	CARBON RESISTOR	10K	1/6W
R28	QRD161J-223	CARBON RESISTOR	22K	1/6W
R29	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R30	QRD161J-103	CARBON RESISTOR	10K	1/6W
R31	QRD161J-103	CARBON RESISTOR	10K	1/6W
R32	QRD161J-103	CARBON RESISTOR	10K	1/6W
R33	QRD161J-103	CARBON RESISTOR	10K	1/6W
R34	QRD161J-471	CARBON RESISTOR	470	1/6W
R35	QRD161J-471	CARBON RESISTOR	470	1/6W
R36	QRD161J-471	CARBON RESISTOR	470	1/6W
R37	QRD161J-471	CARBON RESISTOR	470	1/6W
R38	QRD161J-471	CARBON RESISTOR	470	1/6W
R39	QRD161J-471	CARBON RESISTOR	470	1/6W
R40	QRD161J-471	CARBON RESISTOR	470	1/6W
R41	QRD161J-471	CARBON RESISTOR	470	1/6W
R42	QRD161J-471	CARBON RESISTOR	470	1/6W
R43	QRD161J-471	CARBON RESISTOR	470	1/6W
R44	QRD161J-471	CARBON RESISTOR	470	1/6W
R45	QRD161J-471	CARBON RESISTOR	470	1/6W
R46	QRD161J-471	CARBON RESISTOR	470	1/6W
R47	QRD161J-471	CARBON RESISTOR	470	1/6W
R48	QRD161J-471	CARBON RESISTOR	470	1/6W
R49	QRD161J-471	CARBON RESISTOR	470	1/6W
R50	QRD161J-471	CARBON RESISTOR	470	1/6W
R51	QRD161J-471	CARBON RESISTOR	470	1/6W
R52	QRD161J-471	CARBON RESISTOR	470	1/6W
R53	QRD161J-471	CARBON RESISTOR	470	1/6W
R54	QRD161J-471	CARBON RESISTOR	470	1/6W
R55	QRD161J-471	CARBON RESISTOR	470	1/6W
R56	QRD161J-471	CARBON RESISTOR	470	1/6W
R57	QRD161J-471	CARBON RESISTOR	470	1/6W
R58	QRD161J-471	CARBON RESISTOR	470	1/6W
R59	QRD161J-471	CARBON RESISTOR	470	1/6W
R60	QRD161J-471	CARBON RESISTOR	470	1/6W
R61	QRD161J-471	CARBON RESISTOR	470	1/6W
R62	QRD161J-471	CARBON RESISTOR	470	1/6W

Symbol No.	Part No.	Part Name	Description	
R63	QRD161J-471	CARBON RESISTOR	470	1/6W
R64	QRD161J-471	CARBON RESISTOR	470	1/6W
R65	QRD161J-471	CARBON RESISTOR	470	1/6W
R66	QRD161J-471	CARBON RESISTOR	470	1/6W
R67	QRD161J-471	CARBON RESISTOR	470	1/6W
R68	QRD161J-471	CARBON RESISTOR	470	1/6W
R69	QRD161J-471	CARBON RESISTOR	470	1/6W
R70	QRD161J-471	CARBON RESISTOR	470	1/6W
R71	QRD161J-471	CARBON RESISTOR	470	1/6W
R72	QRD161J-471	CARBON RESISTOR	470	
R73	QRD161J-471	CARBON RESISTOR	470	1/6W
R74	QRD161J-471	CARBON RESISTOR	470	1/6W
R75	QRD161J-471	CARBON RESISTOR	470	1/6W
R76	QRD161J-471	CARBON RESISTOR	470	1/6W
R77	QRD161J-471	CARBON RESISTOR	470	1/6W
R78	QRD161J-471	CARBON RESISTOR	470	1/6W
R79	QRD161J-471	CARBON RESISTOR	470	1/6W
R80	QRD161J-471	CARBON RESISTOR	470	1/6W
R81	QRD161J-471	CARBON RESISTOR	470	1/6W
R82	QRD161J-471	CARBON RESISTOR	470	1/6W
R83	QRD161J-103	CARBON RESISTOR	10K	1/6W
RA1	QRB085J-103	RESISTOR ARRAY	10K	
RA2	QRB085J-103	RESISTOR ARRAY	10K	
RA3	QRB085J-103	RESISTOR ARRAY	10K	
RA4	QRB085J-103	RESISTOR ARRAY	10K	
RA5	QRB085J-103	RESISTOR ARRAY	10K	
RA6	QRB085J-103	RESISTOR ARRAY	10K	
RA7	QRB085J-103	RESISTOR ARRAY	10K	
RA8	QRB085J-103	RESISTOR ARRAY	10K	
RA9	QRB085J-103	RESISTOR ARRAY	10K	
RA12	QRB085J-103	RESISTOR ARRAY	10K	
RA17	QRB085J-103	RESISTOR ARRAY	10K	
RA18	QRB085J-103	RESISTOR ARRAY	10K	
C1	QER41HM-105	E.CAPACITOR	1.0	50V
C2	QEX41CM-156	E.CAPACITOR	15	16V
C3	QCS11HJ-100	CER.CAPACITOR	10P	50V
C4	QCS11HJ-220	CER.CAPACITOR	22P	50V
C5	QEX41CM-156	E.CAPACITOR	15	16V
C6	QEX41CM-156	E.CAPACITOR	15	16V
C7	QEX41CM-156	E.CAPACITOR	15	16V
C8	QEX41CM-156	E.CAPACITOR	15	16V
C9	QEX41CM-156	E.CAPACITOR	15	16V
C10	QEX41CM-156	E.CAPACITOR	15	16V
C11	QEX41CM-156	E.CAPACITOR	15	16V
C12	QEX41CM-156	E.CAPACITOR	15	16V
C13	SMV2209-104	E.CAPACITOR	0.1	
C14	QEX41CM-156	E.CAPACITOR	15	16V
C15	QEX41CM-156	E.CAPACITOR	15	16V
C16	QEX41CM-156	E.CAPACITOR	15	16V
C17	QEX41CM-156	E.CAPACITOR	15	16V
C18	QEX41CM-156	E.CAPACITOR	15	16V
C19	QEX41CM-156	E.CAPACITOR	15	16V
C20	QEX41CM-156	E.CAPACITOR	15	16V
C21	QEX41CM-156	E.CAPACITOR	15	16V
C22	QEX41CM-156	E.CAPACITOR	15	16V
C23	QEX41CM-156	E.CAPACITOR	15	16V

Symbol No.	Part No.	Part Name	Description	
C24	QEX41CM–156	E.CAPACITOR	15	16V
C25	QEX41CM–156	E.CAPACITOR	15	16V
C26	QEX41CM–156	E.CAPACITOR	15	16V
C27	QEX41CM–156	E.CAPACITOR	15	16V
C28	QEX41CM–156	E.CAPACITOR	15	16V
C29	QEX41CM–156	E.CAPACITOR	15	16V
C30	QEX41CM–156	E.CAPACITOR	15	16V
C31	QEX41CM–156	E.CAPACITOR	15	16V
C32	QEX41CM–156	E.CAPACITOR	15	16V
C33	QEX41CM–156	E.CAPACITOR	15	16V
C34	QEX41CM–156	E.CAPACITOR	15	16V
C35	QEX41CM–156	E.CAPACITOR	15	16V
C36	QEX41CM–156	E.CAPACITOR	15	16V
C37	QEX41CM–156	E.CAPACITOR	15	16V
X1	SCV2465	CRYSTAL	16MHz	
X2	SSV0387	CRYSTAL	4.9152MHz	
S1	SCV2419–8103	DIP SW	EDITOR	
S2	SCV2419–8103	DIP SW	EXT INTERFACE	
S3	SCV2419–8103	DIP SW	AUDIO INTERFACE	
S4	SCV2419–8103	DIP SW	WIPE PATTERN	
S5	SCV2419–8103	DIP SW		
S6	SCV2457–001	SWITCH	SC PHASE	
S7	SCV2457–001	SWITCH	SPARE	
S8	SCV2457–001	SWITCH	HARD RESET	
S9	SSV0997–4100	SWITCH	DEBUG	
CN1	SCV1704–200	CONNECTOR	200PIN	
CN2	SCV1704–200	CONNECTOR	200PIN	
T1	SSV0808	TERMINAL		
T2	SSV0808	TERMINAL		

Symbol No.	Part No.	Part Name	Description
IC1	TC74HC574AP	I.C.(M)	TOSHIBA
IC2	P22V10H25–0000	I.C.(M)	AMD
IC2	SCV1205–024	IC SOCKET	24PIN
IC3	P16V8Q–15–0004	I.C.(M)	AMD
IC3	SCV1205–020	IC SOCKET	20PIN
IC4	P22V10H25–0001	I.C.(M)	AMD
IC4	SCV1205–024	IC SOCKET	24PIN
IC5	P16V8Q–15–0005	I.C.(M)	AMD
IC5	SCV1205–020	IC SOCKET	20PIN
IC6	TC74HC574AP	I.C.(M)	TOSHIBA
IC7	P22V10H25–0002	I.C.(M)	AMD
IC7	SCV1205–024	IC SOCKET	24PIN
IC8	SCV2424–001	I.C.(M)	WAFER SCALE INT
IC8	SCV2455–328	IC SOCKET	28PIN
IC9	SCV2424–001	I.C.(M)	WAFER SCALE INT
IC9	SCV2455–328	IC SOCKET	28PIN
IC10	SCV2424–001	I.C.(M)	WAFER SCALE INT
IC10	SCV2455–328	IC SOCKET	28PIN
IC11	SCV2424–001	I.C.(M)	WAFER SCALE INT
IC11	SCV2455–328	IC SOCKET	28PIN
IC12	A1020B–68–0001	I.C.(M)	MATSUSHITA
IC12	SDV0022–068	IC SOCKET	68PIN
IC13	A1020B–68–0004	I.C.(M)	MATSUSHITA
IC13	SDV0022–068	IC SOCKET	68PIN
IC14	SCV2425–001	I.C.(M)	WAFER SCALE I
IC14	SCV2455–328	IC SOCKET	28PIN
IC15	SCV2425–001	I.C.(M)	WAFER SCALE INT
IC15	SCV2455–328	IC SOCKET	28PIN
IC16	SCV2425–001	I.C.(M)	WAFER SCALE INT
IC16	SCV2455–328	IC SOCKET	28PIN
IC17	SCV2425–001	I.C.(M)	WAFER SCALE INT
IC17	SCV2455–328	IC SOCKET	28PIN
IC18	MB86031PF–G–BN	I.C.(M)	FUJITSU
IC19	MB86031PF–G–BN	I.C.(M)	FUJITSU
IC20	SCV2427–001	I.C.(M)	WAFER SCALE INT
IC20	SCV1205–024	IC SOCKET	24PIN
IC21	MB86031PF–G–BN	I.C.(M)	FUJITSU
IC22	MB86031PF–G–BN	I.C.(M)	FUJITSU
IC23	P20V8Q–15–0000	I.C.(M)	AMD
IC23	SCV1205–024	IC SOCKET	24PIN
IC23	SCV2530–020	FERRITE BEAD	
IC24	P20V8Q–15–0001	I.C.(M)	AMD
IC24	SCV1205–024	IC SOCKET	24PIN
IC24	SCV2530–020	FERRITE BEAD	
IC25	P20V8Q–15–0000	I.C.(M)	AMD
IC25	SCV1205–024	IC SOCKET	24PIN
IC26	P20V8Q–15–0001	I.C.(M)	AMD
IC26	SCV1205–024	IC SOCKET	24PIN
IC27	P22V10H25–0003	I.C.(M)	AMD
IC27	SCV1205–024	IC SOCKET	24PIN
IC28	P20V8Q–15–0002	I.C.(M)	AMD
IC28	SCV1205–024	IC SOCKET	24PIN
IC29	P20V8Q–15–0002	I.C.(M)	AMD
IC29	SCV1205–024	IC SOCKET	24PIN
IC30	TC74HC574AP	I.C.(M)	TOSHIBA
IC31	TC74HC574AP	I.C.(M)	TOSHIBA
IC32	SCV2426–001	I.C.(M)	WAFER SCALE INT
IC32	SCV2455–328	IC SOCKET	28PIN
IC33	SCV2426–001	I.C.(M)	WAFER SCALE INT
IC33	SCV2455–328	IC SOCKET	28PIN

Symbol No.	Part No.	Part Name	Description	
IC34	SCV2426-001	I.C.(M)	WAFER SCALE INT	
IC34	SCV2455-328	IC SOCKET	28PIN	
IC35	SCV2426-001	I.C.(M)	WAFER SCALE INT	
IC35	SCV2455-328	IC SOCKET	28PIN	
IC36	SN74HC245N	I.C.(M)	TEXAS	
IC37	SN74HC245N	I.C.(M)	TEXAS	
IC38	TC74HC574AP	I.C.(M)	TOSHIBA	
IC39	TC74HC574AP	I.C.(M)	TOSHIBA	
IC40	A1020B168-0001	I.C.(M)	MATSUSHITA	
IC40	SDV0022-068	IC SOCKET	68PIN	
IC41	SN74HC245N	I.C.(M)	TEXAS	
IC42	SN74HC245N	I.C.(M)	TEXAS	
IC43	SN74HC245N	I.C.(M)	TEXAS	
IC44	IDT49FCT805P	I.C.(M)	IDT	
IC45	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC46	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC47	74AC163PC	I.C.(M)	NATIONAL SEMICO	
IC48	SCV2427-001	I.C.(M)	WAFER SCALE INT	
IC48	SCV1205-024	IC SOCKET	24PIN	
R1	QRD161J-681	CARBON RESISTOR	680	1/6W
R2	QRD161J-681	CARBON RESISTOR	680	1/6W
R3	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R4	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R5	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R6	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R7	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
RA1	QRB085J-103	RESISTOR ARRAY	10K	
RA2	QRB085J-103	RESISTOR ARRAY	10K	
RA3	QRB085J-103	RESISTOR ARRAY	10K	
RA4	QRB085J-103	RESISTOR ARRAY	10K	
RA5	QRB085J-103	RESISTOR ARRAY	10K	
RA6	QRB085J-103	RESISTOR ARRAY	10K	
RA7	QRB085J-103	RESISTOR ARRAY	10K	
C1	QCZ0206-104	CER.CAPACITOR	0.10	
C2	QCZ0206-104	CER.CAPACITOR	0.10	
C3	QCZ0206-104	CER.CAPACITOR	0.10	
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QCZ0206-104	CER.CAPACITOR	0.10	
C6	QCZ0206-104	CER.CAPACITOR	0.10	
C7	QCZ0206-104	CER.CAPACITOR	0.10	
C8	QCZ0206-104	CER.CAPACITOR	0.10	
C9	QCZ0206-104	CER.CAPACITOR	0.10	
C10	QCZ0206-104	CER.CAPACITOR	0.10	
C11	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QCZ0206-104	CER.CAPACITOR	0.10	
C15	QCZ0206-104	CER.CAPACITOR	0.10	
C16	QCZ0206-104	CER.CAPACITOR	0.10	
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C23	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
C25	QCZ0206-104	CER.CAPACITOR	0.10	
C26	QCZ0206-104	CER.CAPACITOR	0.10	
C27	QCZ0206-104	CER.CAPACITOR	0.10	
C28	QCZ0206-104	CER.CAPACITOR	0.10	
C29	QCZ0206-104	CER.CAPACITOR	0.10	
C30	QCZ0206-104	CER.CAPACITOR	0.10	

Symbol No.	Part No.	Part Name	Description	
C31	QCZ0206-104	CER.CAPACITOR	0.10	
C32	QCZ0206-104	CER.CAPACITOR	0.10	
C33	QCZ0206-104	CER.CAPACITOR	0.10	
C34	QCZ0206-104	CER.CAPACITOR	0.10	
C35	QCZ0206-104	CER.CAPACITOR	0.10	
C36	QCZ0206-104	CER.CAPACITOR	0.10	
C37	QCZ0206-104	CER.CAPACITOR	0.10	
C38	QCZ0206-104	CER.CAPACITOR	0.10	
C39	QCZ0206-104	CER.CAPACITOR	0.10	
C41	QCZ0206-104	CER.CAPACITOR	0.10	
C42	QCZ0206-104	CER.CAPACITOR	0.10	
C43	QCZ0206-104	CER.CAPACITOR	0.10	
C44	QCZ0206-104	CER.CAPACITOR	0.10	
C45	QCZ0206-104	CER.CAPACITOR	0.10	
C46	QCZ0206-104	CER.CAPACITOR	0.10	
C47	QCZ0206-104	CER.CAPACITOR	0.10	
C48	QCZ0206-104	CER.CAPACITOR	0.10	
C49	QCZ0206-104	CER.CAPACITOR	0.10	
C50	QCZ0206-104	CER.CAPACITOR	0.10	
C51	QCZ0206-104	CER.CAPACITOR	0.10	
C52	QCZ0206-104	CER.CAPACITOR	0.10	
C53	QCZ0206-104	CER.CAPACITOR	0.10	
C54	QCZ0206-104	CER.CAPACITOR	0.10	
C55	QCZ0206-104	CER.CAPACITOR	0.10	
C56	QCZ0206-104	CER.CAPACITOR	0.10	
C57	QCZ0206-104	CER.CAPACITOR	0.10	
C58	QCZ0206-104	CER.CAPACITOR	0.10	
C59	QCZ0206-104	CER.CAPACITOR	0.10	
C60	QCZ0206-104	CER.CAPACITOR	0.10	
C61	QCZ0206-104	CER.CAPACITOR	0.10	
C100	QEX41CM-156	E.CAPACITOR	15	16V
C101	QEX41CM-156	E.CAPACITOR	15	16V
S1	SSV0997-8100	DIP SW	H POSITION	
CN1	SCV1704-200	CONNECTOR	200PIN	
CN2	SCV1704-200	CONNECTOR	200PIN	

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SCK1125-00A

[1][2][ ][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description		Symbol No.	Part No.	Part Name	Description
IC1	TC74HC574AP	I.C.(M)	TOSHIBA		C1	QCZ0206-104	CER.CAPACITOR	0.10
IC2	TC74HC574AP	I.C.(M)	TOSHIBA		C2	QCZ0206-104	CER.CAPACITOR	0.10
IC3	TC74HC157AP	I.C.(M)	TOSHIBA		C3	QCZ0206-104	CER.CAPACITOR	0.10
IC4	TC74HC157AP	I.C.(M)	TOSHIBA		C4	QCZ0206-104	CER.CAPACITOR	0.10
IC5	TC74HC157AP	I.C.(M)	TOSHIBA		C5	QCZ0206-104	CER.CAPACITOR	0.10
IC6	TC74HC157AP	I.C.(M)	TOSHIBA		C6	QCZ0206-104	CER.CAPACITOR	0.10
IC7	TC74HC157AP	I.C.(M)	TOSHIBA		C7	QCZ0206-104	CER.CAPACITOR	0.10
IC8	P22V10H25-0004	I.C.(M)	AMD		C8	QCZ0206-104	CER.CAPACITOR	0.10
IC8	SCV1205-024	IC SOCKET	24PIN		C9	QCZ0206-104	CER.CAPACITOR	0.10
IC9	TC74HC574AP	I.C.(M)	TOSHIBA		C10	QCZ0206-104	CER.CAPACITOR	0.10
IC10	TC74HC574AP	I.C.(M)	TOSHIBA		C11	QCZ0206-104	CER.CAPACITOR	0.10
IC11	TC74HC574AP	I.C.(M)	TOSHIBA		C12	QCZ0206-104	CER.CAPACITOR	0.10
IC12	TC74HC574AP	I.C.(M)	TOSHIBA		C13	QCZ0206-104	CER.CAPACITOR	0.10
IC13	TC74HC574AP	I.C.(M)	TOSHIBA		C14	QCZ0206-104	CER.CAPACITOR	0.10
IC14	SN74HC245N	I.C.(M)	TEXAS		C15	QCZ0206-104	CER.CAPACITOR	0.10
IC15	SN74HC245N	I.C.(M)	TEXAS		C16	QCZ0206-104	CER.CAPACITOR	0.10
IC16	SN74HC245N	I.C.(M)	TEXAS		C17	QCZ0206-104	CER.CAPACITOR	0.10
IC17	TC74HC574AP	I.C.(M)	TOSHIBA		C18	QCZ0206-104	CER.CAPACITOR	0.10
IC18	P16V8Q-15-0006	I.C.(M)	AMD		C19	QCZ0206-104	CER.CAPACITOR	0.10
IC18	SCV1205-020	IC SOCKET	20PIN		C20	QCZ0206-104	CER.CAPACITOR	0.10
IC19	P16V8Q-15-0007	I.C.(M)	AMD		C22	QCZ0206-104	CER.CAPACITOR	0.10
IC19	SCV1205-020	IC SOCKET	20PIN		C23	QCZ0206-104	CER.CAPACITOR	0.10
IC20	74AC74PC	I.C.(M)	NATIONAL SEMI		C24	QCZ0206-104	CER.CAPACITOR	0.10
IC22	TC74HC574AP	I.C.(M)	TOSHIBA		C25	QCZ0206-104	CER.CAPACITOR	0.10
IC23	TC74HC574AP	I.C.(M)	TOSHIBA		C26	QCZ0206-104	CER.CAPACITOR	0.10
IC24	74F283PC	I.C.(M)	NATIONAL SEMICO		C27	QCZ0206-104	CER.CAPACITOR	0.10
IC25	74F283PC	I.C.(M)	NATIONAL SEMICO		C28	QCZ0206-104	CER.CAPACITOR	0.10
IC26	74F283PC	I.C.(M)	NATIONAL SEMICO		C29	QCZ0206-104	CER.CAPACITOR	0.10
IC27	MB86031PF-G-BN	I.C.(M)	FUJITSU		C30	QCZ0206-104	CER.CAPACITOR	0.10
IC28	TC74HC574AP	I.C.(M)	TOSHIBA		C31	QCZ0206-104	CER.CAPACITOR	0.10
IC29	TC74HC574AP	I.C.(M)	TOSHIBA		C32	QCZ0206-104	CER.CAPACITOR	0.10
IC30	74F283PC	I.C.(M)	NATIONAL SEMICO		C33	QCZ0206-104	CER.CAPACITOR	0.10
IC31	74F283PC	I.C.(M)	NATIONAL SEMICO		C34	QCZ0206-104	CER.CAPACITOR	0.10
IC32	74F283PC	I.C.(M)	NATIONAL SEMICO		C35	QCZ0206-104	CER.CAPACITOR	0.10
IC33	MB86031PF-G-BN	I.C.(M)	FUJITSU		C36	QCZ0206-104	CER.CAPACITOR	0.10
IC34	TC74HC574AP	I.C.(M)	TOSHIBA		C37	QCZ0206-104	CER.CAPACITOR	0.10
IC35	TC74HC574AP	I.C.(M)	TOSHIBA		C38	QCZ0206-104	CER.CAPACITOR	0.10
IC36	74F283PC	I.C.(M)	NATIONAL SEMICO		C39	QCZ0206-104	CER.CAPACITOR	0.10
IC37	74F283PC	I.C.(M)	NATIONAL SEMICO		C40	QCZ0206-104	CER.CAPACITOR	0.10
IC38	74F283PC	I.C.(M)	NATIONAL SEMICO		C41	QCZ0206-104	CER.CAPACITOR	0.10
IC39	MB86031PF-G-BN	I.C.(M)	FUJITSU		C42	QCZ0206-104	CER.CAPACITOR	0.10
IC40	TC74HC574AP	I.C.(M)	TOSHIBA		C43	QCZ0206-104	CER.CAPACITOR	0.10
IC41	TC74HC574AP	I.C.(M)	TOSHIBA		C44	QCZ0206-104	CER.CAPACITOR	0.10
IC42	74F283PC	I.C.(M)	NATIONAL SEMICO		C45	QCZ0206-104	CER.CAPACITOR	0.10
IC43	74F283PC	I.C.(M)	NATIONAL SEMICO		C46	QCZ0206-104	CER.CAPACITOR	0.10
IC44	74F283PC	I.C.(M)	NATIONAL SEMICO		C47	QCZ0206-104	CER.CAPACITOR	0.10
IC45	MB86031PF-G-BN	I.C.(M)	FUJITSU		C48	QCZ0206-104	CER.CAPACITOR	0.10
IC46	EPM128-20-0003	I.C.(M)	ALTERA CORPORAT		C49	QCZ0206-104	CER.CAPACITOR	0.10
IC46	SDV0022-084	IC SOCKET	84PIN		C50	QCZ0206-104	CER.CAPACITOR	0.10
IC47	EPM128-20-0003	I.C.(M)	ALTERA CORPORAT		C51	QCZ0206-104	CER.CAPACITOR	0.10
IC47	SDV0022-084	IC SOCKET	84PIN					
IC48	IDT49FCT805P	I.C.(M)	IDT		CN1	SCV1704-200	CONNECTOR	200PIN
IC49	74AC74PC	I.C.(M)	NATIONAL SEMI		CN2	SCV1704-200	CONNECTOR	200PIN
IC50	74AC74PC	I.C.(M)	NATIONAL SEMI					
IC51	74AC163PC	I.C.(M)	NATIONAL SEMICO					
R1	QRD161J-681	CARBON RESISTOR	680 1/6W					
R2	QRD161J-681	CARBON RESISTOR	680 1/6W					
R3	QRD161J-222	CARBON RESISTOR	2.2K 1/6W					

Symbol No.	Part No.	Part Name	Description		
IC1	TD74BC574P	I.C.(M)	TOSHIBA		
IC2	TD74BC574P	I.C.(M)	TOSHIBA		
IC3	TD74BC574P	I.C.(M)	TOSHIBA		
IC4	TD74BC574P	I.C.(M)	TOSHIBA		
IC6	74AC157PC	I.C.(M)	NATIONAL SEMICO		
IC7	74AC157PC	I.C.(M)	NATIONAL SEMICO		
IC9	SM5830P	I.C.(M)	NPC		
IC11	EPM032-15-0005	I.C.(M)	ALTERA CORPORAT		
IC11	SDV0022-044	IC SOCKET	44PIN		
IC12	EPM032-15-0001	I.C.(M)	ALTERA CORPORAT		
IC12	SDV0022-044	IC SOCKET	44PIN		
IC13	74AC157PC	I.C.(M)	NATIONAL SEMICO		
IC14	74AC157PC	I.C.(M)	NATIONAL SEMICO		
IC16	TD74BC574P	I.C.(M)	TOSHIBA		
IC18	TD74BC574P	I.C.(M)	TOSHIBA		
IC19	TC74HC574AP	I.C.(M)	TOSHIBA		
IC20	TC74HC574AP	I.C.(M)	TOSHIBA		
IC21	TC74HC157AP	I.C.(M)	TOSHIBA		
IC22	TC74HC157AP	I.C.(M)	TOSHIBA		
IC23	TC74HC377AP	I.C.(M)	TOSHIBA		
IC25	P16V8Q-15-0028	I.C.(M)	AMD		
IC25	SCV1205-020	IC SOCKET	20PIN		
IC26	TC74HC74AP	I.C.(M)	TOSHIBA		
IC28	TC74HC574AP	I.C.(M)	TOSHIBA		
IC29	MB86031PF-G-BN	I.C.(M)	FUJITSU		
IC30	EPM128-20-0002	I.C.(M)	ALTERA CORPORAT		
IC30	SDV0022-084	IC SOCKET	84PIN		
IC31	MB86031PF-G-BN	I.C.(M)	FUJITSU		
IC32	EPM128-20-0001	I.C.(M)	ALTERA CORPORAT		
IC32	SDV0022-084	IC SOCKET	84PIN		
IC40	TC74HC161AP	I.C.(M)	TOSHIBA		
IC41	TC74HC161AP	I.C.(M)	TOSHIBA		
IC42	TC74HC161AP	I.C.(M)	TOSHIBA		
IC43	MSM514212-34ZS	I.C.(M)	OKI		
IC44	MSM514212-34ZS	I.C.(M)	OKI		
IC45	P16V8Q-15-0008	I.C.(M)	AMD		
IC45	SCV1205-020	IC SOCKET	20PIN		
IC46	MSM514212-34ZS	I.C.(M)	OKI		
IC47	MSM514212-34ZS	I.C.(M)	OKI		
IC48	P16V8Q-15-0009	I.C.(M)	AMD		
IC48	SCV1205-020	IC SOCKET	20PIN		
IC49	JCS0019	I.C.(M)	FUJITSU		
IC50	P22V10H25-0005	I.C.(M)	AMD		
IC50	SCV1205-024	IC SOCKET	24PIN		
IC51	P16V8Q-15-0010	I.C.(M)	AMD		
IC51	SCV1205-020	IC SOCKET	20PIN		
IC52	P22V10H25-0007	I.C.(M)	AMD		
IC52	SCV1205-024	IC SOCKET	24PIN		
IC53	P22V10H25-0007	I.C.(M)	AMD		
IC53	SCV1205-024	IC SOCKET	24PIN		
IC60	A1010B-68-0001	I.C.(M)	MATSUSHITA		
IC60	SDV0022-068	IC SOCKET	68PIN		
IC62	P16V8Q-15-0029	I.C.(M)	AMD		
IC62	SCV1205-020	IC SOCKET	20PIN		
IC63	TC74HC157AP	I.C.(M)	TOSHIBA		
IC64	TC74HC157AP	I.C.(M)	TOSHIBA		
IC65	TC74HC157AP	I.C.(M)	TOSHIBA		
IC66	TC74HC157AP	I.C.(M)	TOSHIBA		
IC67	TC74HC574AP	I.C.(M)	TOSHIBA		
IC68	TC74HC574AP	I.C.(M)	TOSHIBA		
IC69	TC74HC574AP	I.C.(M)	TOSHIBA		
IC70	TC74HC574AP	I.C.(M)	TOSHIBA		
IC71	TC74HC574AP	I.C.(M)	TOSHIBA		
IC100	IDT49FCT805P	I.C.(M)	IDT		
IC101	74AC74PC	I.C.(M)	NATIONAL SEMI		
IC102	74AC74PC	I.C.(M)	NATIONAL SEMI		
IC103	74AC161PC	I.C.(M)	NATIONAL SEMICO		
IC105	TC74HC245AP	I.C.(M)	TOSHIBA		
IC106	TC74HC245AP	I.C.(M)	TOSHIBA		
IC107	P16V8Q-15-0030	I.C.(M)	AMD		
IC107	SCV1205-020	IC SOCKET	20PIN		
IC108	TC74HC574AP	I.C.(M)	TOSHIBA		
IC109	TC74HC245AP	I.C.(M)	TOSHIBA		
IC110	TC74HC574AP	I.C.(M)	TOSHIBA		
IC111	P16V8Q-15-0031	I.C.(M)	AMD		
IC111	SCV1205-020	IC SOCKET	20PIN		
R1	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R2	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R3	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R4	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R5	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R6	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R7	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R8	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R9	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R10	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R11	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R12	QRD161J-472	CARBON RESISTOR	4.7K	1/6W	
R13	QRD161J-681	CARBON RESISTOR	680	1/6W	
R17	QRD161J-681	CARBON RESISTOR	680	1/6W	
R18	QRD161J-681	CARBON RESISTOR	680	1/6W	
R19	QRD161J-681	CARBON RESISTOR	680	1/6W	
R20	QRD161J-681	CARBON RESISTOR	680	1/6W	
R21	QRD161J-681	CARBON RESISTOR	680	1/6W	
R23	QRD161J-681	CARBON RESISTOR	680	1/6W	
R24	QRD161J-0R0	CARBON RESISTOR	0	1/6W	
R25	QRD161J-681	CARBON RESISTOR	680	1/6W	
R27	QRD161J-681	CARBON RESISTOR	680	1/6W	
R28	QRD161J-681	CARBON RESISTOR	680	1/6W	
R29	QRD161J-681	CARBON RESISTOR	680	1/6W	
R30	QRD161J-0R0	CARBON RESISTOR	0	1/6W	
RA1	QRB085J-102	RESISTOR ARRAY	1.0K		
RA2	QRB085J-102	RESISTOR ARRAY	1.0K		
RA3	QRB085J-102	RESISTOR ARRAY	1.0K		
RA4	QRB085J-102	RESISTOR ARRAY	1.0K		
C1	QCZ0206-104	CER.CAPACITOR	0.10		
C2	QCZ0206-104	CER.CAPACITOR	0.10		
C3	QCZ0206-104	CER.CAPACITOR	0.10		
C4	QCZ0206-104	CER.CAPACITOR	0.10		
C5	QCZ0206-104	CER.CAPACITOR	0.10		
C6	QCZ0206-104	CER.CAPACITOR	0.10		
C7	QCZ0206-104	CER.CAPACITOR	0.10		
C8	QCZ0206-104	CER.CAPACITOR	0.10		
C9	QCZ0206-104	CER.CAPACITOR	0.10		
C10	QCZ0206-104	CER.CAPACITOR	0.10		

Symbol No.	Part No.	Part Name	Description
C11	QCZ0206-104	CER.CAPACITOR	0.10
C12	QCZ0206-104	CER.CAPACITOR	0.10
C13	QCZ0206-104	CER.CAPACITOR	0.10
C14	QCZ0206-104	CER.CAPACITOR	0.10
C15	QCZ0206-104	CER.CAPACITOR	0.10
C16	QCZ0206-104	CER.CAPACITOR	0.10
C17	QCZ0206-104	CER.CAPACITOR	0.10
C18	QCZ0206-104	CER.CAPACITOR	0.10
C19	QCZ0206-104	CER.CAPACITOR	0.10
C20	QCZ0206-104	CER.CAPACITOR	0.10
C21	QCZ0206-104	CER.CAPACITOR	0.10
C22	QCZ0206-104	CER.CAPACITOR	0.10
C23	QCZ0206-104	CER.CAPACITOR	0.10
C24	QCZ0206-104	CER.CAPACITOR	0.10
C25	QCZ0206-104	CER.CAPACITOR	0.10
C26	QCZ0206-104	CER.CAPACITOR	0.10
C28	QCZ0206-104	CER.CAPACITOR	0.10
C29	QCZ0206-104	CER.CAPACITOR	0.10
C30	QCZ0206-104	CER.CAPACITOR	0.10
C31	QCZ0206-104	CER.CAPACITOR	0.10
C32	QCZ0206-104	CER.CAPACITOR	0.10
C40	QCZ0206-104	CER.CAPACITOR	0.10
C41	QCZ0206-104	CER.CAPACITOR	0.10
C42	QCZ0206-104	CER.CAPACITOR	0.10
C43	QCZ0206-104	CER.CAPACITOR	0.10
C44	QCZ0206-104	CER.CAPACITOR	0.10
C45	QCZ0206-104	CER.CAPACITOR	0.10
C46	QCZ0206-104	CER.CAPACITOR	0.10
C47	QCZ0206-104	CER.CAPACITOR	0.10
C48	QCZ0206-104	CER.CAPACITOR	0.10
C49	QCZ0206-104	CER.CAPACITOR	0.10
C50	QCZ0206-104	CER.CAPACITOR	0.10
C51	QCZ0206-104	CER.CAPACITOR	0.10
C52	QCZ0206-104	CER.CAPACITOR	0.10
C53	QCZ0206-104	CER.CAPACITOR	0.10
C60	QCZ0206-104	CER.CAPACITOR	0.10
C62	QCZ0206-104	CER.CAPACITOR	0.10
C63	QCZ0206-104	CER.CAPACITOR	0.10
C64	QCZ0206-104	CER.CAPACITOR	0.10
C65	QCZ0206-104	CER.CAPACITOR	0.10
C66	QCZ0206-104	CER.CAPACITOR	0.10
C67	QCZ0206-104	CER.CAPACITOR	0.10
C68	QCZ0206-104	CER.CAPACITOR	0.10
C69	QCZ0206-104	CER.CAPACITOR	0.10
C70	QCZ0206-104	CER.CAPACITOR	0.10
C71	QCZ0206-104	CER.CAPACITOR	0.10
C72	QCZ0206-104	CER.CAPACITOR	0.10
C73	QCZ0206-104	CER.CAPACITOR	0.10
C74	QCZ0206-104	CER.CAPACITOR	0.10
C75	QCZ0206-104	CER.CAPACITOR	0.10
C76	QCZ0206-104	CER.CAPACITOR	0.10
C77	QCZ0206-104	CER.CAPACITOR	0.10
C78	QCZ0206-104	CER.CAPACITOR	0.10
C79	QCZ0206-104	CER.CAPACITOR	0.10
C80	QCZ0206-104	CER.CAPACITOR	0.10
C100	QCZ0206-104	CER.CAPACITOR	0.10
C101	QCZ0206-104	CER.CAPACITOR	0.10
C102	QCZ0206-104	CER.CAPACITOR	0.10
C103	QCZ0206-104	CER.CAPACITOR	0.10
C105	QCZ0206-104	CER.CAPACITOR	0.10

Symbol No.	Part No.	Part Name	Description
C106	QCZ0206-104	CER.CAPACITOR	0.10
C107	QCZ0206-104	CER.CAPACITOR	0.10
C108	QCZ0206-104	CER.CAPACITOR	0.10
C109	QCZ0206-104	CER.CAPACITOR	0.10
C110	QCZ0206-104	CER.CAPACITOR	0.10
C111	QCZ0206-104	CER.CAPACITOR	0.10
S1	SCV1147-003	CONNECTOR	KEY/DSK
S3	SCV2419-8103	DIP SW	KEY FILL DL
S5	SCV1147-003	CONNECTOR	KEY/DSK
S6	SCV1147-003	CONNECTOR	KEY/DSK
S7	SCV2419-8103	DIP SW	BY-PASS KEY DL
S8	SCV1147-003	CONNECTOR	C/L
S9	SCV1147-003	CONNECTOR	SHARP
S10	SCV1147-003	CONNECTOR	LPF
S11	SCV1148-004	CONNECTOR	TEST;FILL
CN1	SCV1704-200	CONNECTOR	200PIN
CN2	SCV1704-200	CONNECTOR	200PIN
P1	SCV1149-001	SHORT PLUG	
P5	SCV1149-001	SHORT PLUG	
P6	SCV1149-001	SHORT PLUG	
P8	SCV1149-001	SHORT PLUG	
P9	SCV1149-001	SHORT PLUG	
P10	SCV1149-001	SHORT PLUG	
P11	SCV1149-001	SHORT PLUG	

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Symbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
IC1	TD74BC574P	I.C.(M)	TOSHIBA	IC58	TC74AC273P	I.C.(M)	TOSHIBA
IC2	MSM514212-34ZS	I.C.(M)	OKI	IC59	TC74HC157AP	I.C.(M)	TOSHIBA
IC4	TD74BC574P	I.C.(M)	TOSHIBA	IC60	TC74HC157AP	I.C.(M)	TOSHIBA
IC5	MSM514212-34ZS	I.C.(M)	OKI	IC61	TC74HC157AP	I.C.(M)	TOSHIBA
IC6	TD74BC574P	I.C.(M)	TOSHIBA	IC62	TC74HC157AP	I.C.(M)	TOSHIBA
IC7	MSM514212-34ZS	I.C.(M)	OKI	IC63	TC74HC157AP	I.C.(M)	TOSHIBA
IC10	74AC04PC	I.C.(M)	NATIONAL SEMI	IC64	TC74HC74AP	I.C.(M)	TOSHIBA
IC12	74AC161PC	I.C.(M)	NATIONAL SEMICO	IC65	TC74HC273AP	I.C.(M)	TOSHIBA
IC13	74AC161PC	I.C.(M)	NATIONAL SEMICO	IC66	TC74HC273AP	I.C.(M)	TOSHIBA
IC14	74AC161PC	I.C.(M)	NATIONAL SEMICO	IC67	TC74HC153AP	I.C.(M)	TOSHIBA
IC15	74AC161PC	I.C.(M)	NATIONAL SEMICO	IC68	TC74HC157AP	I.C.(M)	TOSHIBA
IC16	74AC161PC	I.C.(M)	NATIONAL SEMICO	IC69	TC74HC157AP	I.C.(M)	TOSHIBA
IC17	74AC161PC	I.C.(M)	NATIONAL SEMICO	IC70	MB86031PF-G-BN	I.C.(M)	FUJITSU
IC18	TMC2246AH5C	I.C.(M)	RAYTHEON	IC71	MB86031PF-G-BN	I.C.(M)	FUJITSU
IC18	SCV2458-121	IC SOCKET	121PIN	IC72	74AC540PC	I.C.(M)	NATIONAL SEMICO
IC19	TMC2246AH5C	I.C.(M)	RAYTHEON	IC73	P16V8Q-15-0032	I.C.(M)	AMD
IC19	SCV2458-121	IC SOCKET	121PIN	IC73	SCV1205-020	IC SOCKET	20PIN
IC20	74F283PC	I.C.(M)	NATIONAL SEMICO	IC74	74F283PC	I.C.(M)	NATIONAL SEMICO
IC21	74F283PC	I.C.(M)	NATIONAL SEMICO	IC75	74F283PC	I.C.(M)	NATIONAL SEMICO
IC22	74F283PC	I.C.(M)	NATIONAL SEMICO	IC76	TC74HC574AP	I.C.(M)	TOSHIBA
IC23	74AC574PC	I.C.(M)	NATIONAL SEMICO	IC77	TC74AC273P	I.C.(M)	TOSHIBA
IC24	74F283PC	I.C.(M)	NATIONAL SEMICO	IC78	TC74AC273P	I.C.(M)	TOSHIBA
IC25	74F283PC	I.C.(M)	NATIONAL SEMICO	IC79	TC74HC574AP	I.C.(M)	TOSHIBA
IC26	74AC04PC	I.C.(M)	NATIONAL SEMI	IC80	TC74AC273P	I.C.(M)	TOSHIBA
IC27	SCV1205-020	IC SOCKET	20PIN	IC81	TC74HC273AP	I.C.(M)	TOSHIBA
IC28	TD74BC574P	I.C.(M)	TOSHIBA	IC82	TC74HC273AP	I.C.(M)	TOSHIBA
IC29	TD74BC574P	I.C.(M)	TOSHIBA	IC83	TC74HC574AP	I.C.(M)	TOSHIBA
IC30	74F157APC	I.C.(M)	NATIONAL SEMICO	IC84	TC74HC574AP	I.C.(M)	TOSHIBA
IC31	74F157APC	I.C.(M)	NATIONAL SEMICO	IC85	TC74HC574AP	I.C.(M)	TOSHIBA
IC32	74F157APC	I.C.(M)	NATIONAL SEMICO	IC86	TC74HC273AP	I.C.(M)	TOSHIBA
IC33	TMC2246AH5C	I.C.(M)	RAYTHEON	IC87	TC74HC574AP	I.C.(M)	TOSHIBA
IC33	SCV2458-121	IC SOCKET	121PIN	IC88	TC74HC574AP	I.C.(M)	TOSHIBA
IC34	74AC574PC	I.C.(M)	NATIONAL SEMICO	IC89	TC74HC574AP	I.C.(M)	TOSHIBA
IC35	TD74BC574P	I.C.(M)	TOSHIBA	IC90	P22V10H25-0010	I.C.(M)	AMD
IC36	TD74BC574P	I.C.(M)	TOSHIBA	IC90	SCV1205-024	IC SOCKET	24PIN
IC37	TC74HC74AP	I.C.(M)	TOSHIBA	IC91	TC74HC574AP	I.C.(M)	TOSHIBA
IC38	TC74HC574AP	I.C.(M)	TOSHIBA	IC92	TC74HC540AP	I.C.(M)	TOSHIBA
IC39	TC74HC574AP	I.C.(M)	TOSHIBA	IC93	74F283PC	I.C.(M)	NATIONAL SEMICO
IC40	74AC32PC	I.C.(M)	NATIONAL SEMICO	IC94	74F283PC	I.C.(M)	NATIONAL SEMICO
IC41	74F283PC	I.C.(M)	NATIONAL SEMICO	IC95	TC74HC574AP	I.C.(M)	TOSHIBA
IC42	74F283PC	I.C.(M)	NATIONAL SEMICO	IC100	IDT49FCT805P	I.C.(M)	IDT
IC43	P22V10H25-0009	I.C.(M)	AMD	IC101	74AC74PC	I.C.(M)	NATIONAL SEMI
IC43	SCV1205-024	IC SOCKET	24PIN	IC102	74AC74PC	I.C.(M)	NATIONAL SEMI
IC44	P22V10H25-0009	I.C.(M)	AMD	IC103	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC44	SCV1205-024	IC SOCKET	24PIN	IC104	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC45	P22V10H25-0009	I.C.(M)	AMD	IC105	TC74HC245AP	I.C.(M)	TOSHIBA
IC45	SCV1205-024	IC SOCKET	24PIN	IC106	TC74HC245AP	I.C.(M)	TOSHIBA
IC46	MB86031PF-G-BN	I.C.(M)	FUJITSU	IC107	P16V8Q-15-0033	I.C.(M)	AMD
IC47	MB86031PF-G-BN	I.C.(M)	FUJITSU	IC107	SCV1205-020	IC SOCKET	20PIN
IC48	74F283PC	I.C.(M)	NATIONAL SEMICO	IC108	TC74HC574AP	I.C.(M)	TOSHIBA
IC49	74F283PC	I.C.(M)	NATIONAL SEMICO	IC109	TC74HC574AP	I.C.(M)	TOSHIBA
IC50	TC74HC574AP	I.C.(M)	TOSHIBA	IC110	TC74HC574AP	I.C.(M)	TOSHIBA
IC51	TC74HC574AP	I.C.(M)	TOSHIBA	IC111	74AC157PC	I.C.(M)	NATIONAL SEMICO
IC52	TC74HC574AP	I.C.(M)	TOSHIBA	IC112	74AC157PC	I.C.(M)	NATIONAL SEMICO
IC53	74AC32PC	I.C.(M)	NATIONAL SEMICO	IC113	74AC157PC	I.C.(M)	NATIONAL SEMICO
IC54	74F283PC	I.C.(M)	NATIONAL SEMICO	IC114	74AC157PC	I.C.(M)	NATIONAL SEMICO
IC55	74F283PC	I.C.(M)	NATIONAL SEMICO	IC115	TC74HC574AP	I.C.(M)	TOSHIBA
IC56	TC74AC273P	I.C.(M)	TOSHIBA	IC116	TC74HC574AP	I.C.(M)	TOSHIBA
IC57	P22V10H25-0010	I.C.(M)	AMD	IC117	TC74HC574AP	I.C.(M)	TOSHIBA
IC57	SCV1205-024	IC SOCKET	24PIN	IC118	74AC157PC	I.C.(M)	NATIONAL SEMICO

Symbol No.	Part No.	Part Name	Description		Symbol No.	Part No.	Part Name	Description
IC119	74AC157PC	I.C.(M)	NATIONAL SEMICO		C24	QCZ0206-104	CER.CAPACITOR	0.10
IC120	74AC157PC	I.C.(M)	NATIONAL SEMICO		C25	QCZ0206-104	CER.CAPACITOR	0.10
IC121	74AC157PC	I.C.(M)	NATIONAL SEMICO		C26	QCZ0206-104	CER.CAPACITOR	0.10
IC122	TC74HC574AP	I.C.(M)	TOSHIBA		C27	QCZ0206-104	CER.CAPACITOR	0.10
IC123	TC74HC574AP	I.C.(M)	TOSHIBA		C28	QCZ0206-104	CER.CAPACITOR	0.10
					C29	QCZ0206-104	CER.CAPACITOR	0.10
					C30	QCZ0206-104	CER.CAPACITOR	0.10
R1	QRD161J-681	CARBON RESISTOR	680 1/6W					
R2	QRD161J-681	CARBON RESISTOR	680 1/6W		C31	QCZ0206-104	CER.CAPACITOR	0.10
R3	QRD161J-681	CARBON RESISTOR	680 1/6W		C32	QCZ0206-104	CER.CAPACITOR	0.10
R4	QRD161J-681	CARBON RESISTOR	680 1/6W		C33	QCZ0206-104	CER.CAPACITOR	0.10
R5	QRD161J-681	CARBON RESISTOR	680 1/6W		C34	QCZ0206-104	CER.CAPACITOR	0.10
R6	QRD161J-681	CARBON RESISTOR	680 1/6W		C35	QCZ0206-104	CER.CAPACITOR	0.10
R7	QRD161J-103	CARBON RESISTOR	10K 1/6W		C36	QCZ0206-104	CER.CAPACITOR	0.10
R8	QRD161J-103	CARBON RESISTOR	10K 1/6W		C37	QCZ0206-104	CER.CAPACITOR	0.10
R9	QRD161J-103	CARBON RESISTOR	10K 1/6W		C38	QCZ0206-104	CER.CAPACITOR	0.10
R10	QRD161J-103	CARBON RESISTOR	10K 1/6W		C39	QCZ0206-104	CER.CAPACITOR	0.10
					C40	QCZ0206-104	CER.CAPACITOR	0.10
R11	QRD161J-103	CARBON RESISTOR	10K 1/6W					
R12	QRD161J-681	CARBON RESISTOR	680 1/6W		C41	QCZ0206-104	CER.CAPACITOR	0.10
R13	QRD161J-222	CARBON RESISTOR	2.2K 1/6W		C42	QCZ0206-104	CER.CAPACITOR	0.10
R14	QRD161J-681	CARBON RESISTOR	680 1/6W		C43	QCZ0206-104	CER.CAPACITOR	0.10
R15	QRD161J-681	CARBON RESISTOR	680 1/6W		C44	QCZ0206-104	CER.CAPACITOR	0.10
R17	QRD161J-681	CARBON RESISTOR	680 1/6W		C45	QCZ0206-104	CER.CAPACITOR	0.10
R18	QRD161J-681	CARBON RESISTOR	680 1/6W		C46	QCZ0206-104	CER.CAPACITOR	0.10
R19	QRD161J-471	CARBON RESISTOR	470 1/6W		C47	QCZ0206-104	CER.CAPACITOR	0.10
R20	QRD161J-471	CARBON RESISTOR	470 1/6W		C48	QCZ0206-104	CER.CAPACITOR	0.10
R21	QRD161J-471	CARBON RESISTOR	470 1/6W		C49	QCZ0206-104	CER.CAPACITOR	0.10
					C50	QCZ0206-104	CER.CAPACITOR	0.10
R22	QRD161J-471	CARBON RESISTOR	470 1/6W					
R23	QRD161J-471	CARBON RESISTOR	470 1/6W		C51	QCZ0206-104	CER.CAPACITOR	0.10
R24	QRD161J-471	CARBON RESISTOR	470 1/6W		C52	QCZ0206-104	CER.CAPACITOR	0.10
					C53	QCZ0206-104	CER.CAPACITOR	0.10
					C54	QCZ0206-104	CER.CAPACITOR	0.10
RA1	QRB085J-471	RESISTOR ARRAY	470		C55	QCZ0206-104	CER.CAPACITOR	0.10
RA4	QRB085J-471	RESISTOR ARRAY	470		C56	QCZ0206-104	CER.CAPACITOR	0.10
RA6	QRB085J-471	RESISTOR ARRAY	470		C57	QCZ0206-104	CER.CAPACITOR	0.10
RA8	QRB085J-471	RESISTOR ARRAY	470		C58	QCZ0206-104	CER.CAPACITOR	0.10
					C59	QCZ0206-104	CER.CAPACITOR	0.10
					C60	QCZ0206-104	CER.CAPACITOR	0.10
C1	QCZ0206-104	CER.CAPACITOR	0.10					
C2	QCZ0206-104	CER.CAPACITOR	0.10		C61	QCZ0206-104	CER.CAPACITOR	0.10
C3	QCZ0206-104	CER.CAPACITOR	0.10		C62	QCZ0206-104	CER.CAPACITOR	0.10
C4	QCZ0206-104	CER.CAPACITOR	0.10		C63	QCZ0206-104	CER.CAPACITOR	0.10
C5	QCZ0206-104	CER.CAPACITOR	0.10		C64	QCZ0206-104	CER.CAPACITOR	0.10
C6	QCZ0206-104	CER.CAPACITOR	0.10		C65	QCZ0206-104	CER.CAPACITOR	0.10
C7	QCZ0206-104	CER.CAPACITOR	0.10		C66	QCZ0206-104	CER.CAPACITOR	0.10
C8	QCZ0206-104	CER.CAPACITOR	0.10		C67	QCZ0206-104	CER.CAPACITOR	0.10
C9	QCZ0206-104	CER.CAPACITOR	0.10		C68	QCZ0206-104	CER.CAPACITOR	0.10
C10	QCZ0206-104	CER.CAPACITOR	0.10		C69	QCZ0206-104	CER.CAPACITOR	0.10
					C70	QCZ0206-104	CER.CAPACITOR	0.10
C11	QCZ0206-104	CER.CAPACITOR	0.10					
C12	QCZ0206-104	CER.CAPACITOR	0.10		C71	QCZ0206-104	CER.CAPACITOR	0.10
C13	QCZ0206-104	CER.CAPACITOR	0.10		C72	QCZ0206-104	CER.CAPACITOR	0.10
C14	QCZ0206-104	CER.CAPACITOR	0.10		C73	QCZ0206-104	CER.CAPACITOR	0.10
C15	QCZ0206-104	CER.CAPACITOR	0.10		C74	QCZ0206-104	CER.CAPACITOR	0.10
C16	QCZ0206-104	CER.CAPACITOR	0.10		C75	QCZ0206-104	CER.CAPACITOR	0.10
C17	QCZ0206-104	CER.CAPACITOR	0.10		C76	QCZ0206-104	CER.CAPACITOR	0.10
C18	QCZ0206-104	CER.CAPACITOR	0.10		C77	QCZ0206-104	CER.CAPACITOR	0.10
C19	QCZ0206-104	CER.CAPACITOR	0.10		C78	QCZ0206-104	CER.CAPACITOR	0.10
C20	QCZ0206-104	CER.CAPACITOR	0.10		C79	QCZ0206-104	CER.CAPACITOR	0.10
					C80	QCZ0206-104	CER.CAPACITOR	0.10
C21	QCZ0206-104	CER.CAPACITOR	0.10					
C22	QCZ0206-104	CER.CAPACITOR	0.10		C81	QCZ0206-104	CER.CAPACITOR	0.10
C23	QCZ0206-104	CER.CAPACITOR	0.10		C82	QCZ0206-104	CER.CAPACITOR	0.10

Symbol No.	Part No.	Part Name	Description
C83	QCZ0206-104	CER.CAPACITOR	0.10
C84	QCZ0206-104	CER.CAPACITOR	0.10
C85	QCZ0206-104	CER.CAPACITOR	0.10
C86	QCZ0206-104	CER.CAPACITOR	0.10
C87	QCZ0206-104	CER.CAPACITOR	0.10
C88	QCZ0206-104	CER.CAPACITOR	0.10
C89	QCZ0206-104	CER.CAPACITOR	0.10
C90	QCZ0206-104	CER.CAPACITOR	0.10
C91	QCZ0206-104	CER.CAPACITOR	0.10
C92	QCZ0206-104	CER.CAPACITOR	0.10
C93	QCZ0206-104	CER.CAPACITOR	0.10
C94	QCZ0206-104	CER.CAPACITOR	0.10
C95	QCZ0206-104	CER.CAPACITOR	0.10
C100	QCZ0206-104	CER.CAPACITOR	0.10
C101	QCZ0206-104	CER.CAPACITOR	0.10
C102	QCZ0206-104	CER.CAPACITOR	0.10
C103	QCZ0206-104	CER.CAPACITOR	0.10
C104	QCZ0206-104	CER.CAPACITOR	0.10
C105	QCZ0206-104	CER.CAPACITOR	0.10
C106	QCZ0206-104	CER.CAPACITOR	0.10
C107	QCZ0206-104	CER.CAPACITOR	0.10
C108	QCZ0206-104	CER.CAPACITOR	0.10
C109	QCZ0206-104	CER.CAPACITOR	0.10
C110	QCZ0206-104	CER.CAPACITOR	0.10
C111	QCZ0206-104	CER.CAPACITOR	0.10
C112	QCZ0206-104	CER.CAPACITOR	0.10
C113	QCZ0206-104	CER.CAPACITOR	0.10
C114	QCZ0206-104	CER.CAPACITOR	0.10
C115	QCZ0206-104	CER.CAPACITOR	0.10
C116	QCZ0206-104	CER.CAPACITOR	0.10
C117	QCZ0206-104	CER.CAPACITOR	0.10
C118	QCZ0206-104	CER.CAPACITOR	0.10
C119	QCZ0206-104	CER.CAPACITOR	0.10
C120	QCZ0206-104	CER.CAPACITOR	0.10
C121	QCZ0206-104	CER.CAPACITOR	0.10
C122	QCZ0206-104	CER.CAPACITOR	0.10
C123	QCZ0206-104	CER.CAPACITOR	0.10
C146	QCZ0206-104	CER.CAPACITOR	0.10
C147	QCZ0206-104	CER.CAPACITOR	0.10
C170	QCZ0206-104	CER.CAPACITOR	0.10
C171	QCZ0206-104	CER.CAPACITOR	0.10
S1	SCV2419-8103	DIP SW	PGM PST DL
S2	SCV2419-8103	DIP SW	KEY FILL DL
S3	SCV1148-012	CONNECTOR	TEST
CN1	SCV1704-200	CONNECTOR	200PIN
CN2	SCV1704-200	CONNECTOR	200PIN
P31	SCV1149-001	SHORT PLUG	
P32	SCV1149-001	SHORT PLUG	
P33	SCV1149-001	SHORT PLUG	
P34	SCV1149-001	SHORT PLUG	
P35	SCV1149-001	SHORT PLUG	

Symbol No.	Part No.	Part Name	Description
IC1	TD74BC574P	I.C.(M)	TOSHIBA
IC2	TD74BC574P	I.C.(M)	TOSHIBA
IC3	TD74BC574P	I.C.(M)	TOSHIBA
IC4	TD74BC574P	I.C.(M)	TOSHIBA
IC5	TD74BC574P	I.C.(M)	TOSHIBA
IC6	74AC04PC	I.C.(M)	NATIONAL SEMICO
IC7	MSM514212-34ZS	I.C.(M)	OKI
IC9	MSM514212-34ZS	I.C.(M)	OKI
IC10	74AC157PC	I.C.(M)	NATIONAL SEMICO
IC11	74AC157PC	I.C.(M)	NATIONAL SEMICO
IC12	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC13	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC14	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC16	74AC04PC	I.C.(M)	NATIONAL SEMI
IC17	EPM032-15-0001	I.C.(M)	ALTERA CORPORAT
IC17	SDV0022-044	IC SOCKET	44PIN
IC18	TMC2246AH5C	I.C.(M)	RAYTHEON
IC18	SCV2458-121	IC SOCKET	121PIN
IC19	TMC2246AH5C	I.C.(M)	RAYTHEON
IC19	SCV2458-121	IC SOCKET	121PIN
IC20	TC74HC574AP	I.C.(M)	TOSHIBA
IC21	EPM032-15-0004	I.C.(M)	ALTERA CORPORAT
IC21	SDV0022-044	IC SOCKET	44PIN
IC22	EPM032-15-0013	I.C.(M)	PALTEK
IC22	SDV0022-044	IC SOCKET	44PIN
IC23	EPM032-15-0013	I.C.(M)	PALTEK
IC23	SDV0022-044	IC SOCKET	44@PIN
IC24	TD74BC574P	I.C.(M)	TOSHIBA
IC26	TD74BC574P	I.C.(M)	TOSHIBA
IC27	TD74BC574P	I.C.(M)	TOSHIBA
IC29	TD74BC574P	I.C.(M)	TOSHIBA
IC30	MSM514212-34ZS	I.C.(M)	OKI
IC32	MSM514212-34ZS	I.C.(M)	OKI
IC33	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC34	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC35	74AC161PC	I.C.(M)	NATIONAL SEMICO
IC36	TMC2111AN2C	I.C.(M)	RAYTHEON
IC37	TMC2111AN2C	I.C.(M)	RAYTHEON
IC38	EPM032-15-0013	I.C.(M)	PALTEK
IC38	SDV0022-044	IC SOCKET	44PIN
IC39	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC40	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC41	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC42	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC44	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC45	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC46	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC47	74AC153PC	I.C.(M)	NATIONAL SEMICO
IC49	TD74BC574P	I.C.(M)	TOSHIBA
IC50	TD74BC574P	I.C.(M)	TOSHIBA
IC51	TC74HC157AP	I.C.(M)	TOSHIBA
IC52	TC74HC157AP	I.C.(M)	TOSHIBA
IC53	TC74HC157AP	I.C.(M)	TOSHIBA
IC54	TC74HC157AP	I.C.(M)	TOSHIBA
IC55	TC74HC157AP	I.C.(M)	TOSHIBA
IC56	TMC2111AN2C	I.C.(M)	RAYTHEON
IC57	TMC2111AN2C	I.C.(M)	RAYTHEON
IC58	TMC2111AN2C	I.C.(M)	RAYTHEON
IC59	MB86031PF-G-BN	I.C.(M)	FUJITSU
IC60	MB86031PF-G-BN	I.C.(M)	FUJITSU

Symbol No.	Part No.	Part Name	Description	
IC63	TC74HC74AP	I.C.(M)	TOSHIBA	
IC64	TC74HC273AP	I.C.(M)	TOSHIBA	
IC65	EPM032-15-0003	I.C.(M)	ALTERA CORPORAT	
IC65	SDV0022-044	IC SOCKET	44PIN	
IC66	EPM032-15-0003	I.C.(M)	ALTERA CORPORAT	
IC66	SDV0022-044	IC SOCKET	44PIN	
IC67	TC74HC273AP	I.C.(M)	TOSHIBA	
IC68	TC74HC157AP	I.C.(M)	TOSHIBA	
IC69	TC74HC157AP	I.C.(M)	TOSHIBA	
IC70	TC74HC157AP	I.C.(M)	TOSHIBA	
IC71	TC74HC74AP	I.C.(M)	TOSHIBA	
IC72	TC74HC574AP	I.C.(M)	TOSHIBA	
IC73	SCV2464-001	I.C.(M)	WAFER SCALE INT	
IC73	SCV1205-024	IC SOCKET	24PIN	
IC74	TMC2111AN2C	I.C.(M)	RAYTHEON	
IC76	EPM032-15-0013	I.C.(M)	PALTEK	
IC76	SDV0022-044	IC SOCKET	44PIN	
IC77	TD74BC574P	I.C.(M)	TOSHIBA	
IC78	TC74HC574AP	I.C.(M)	TOSHIBA	
IC79	TC74HC574AP	I.C.(M)	TOSHIBA	
IC80	TC74HC574AP	I.C.(M)	TOSHIBA	
IC81	P22V10H25-0010	I.C.(M)	AMD	
IC81	SCV1205-024	IC SOCKET	24PIN	
IC82	EPM032-15-0003	I.C.(M)	ALTERA CORPORAT	
IC82	SDV0022-044	IC SOCKET	44PIN	
IC83	TC74HC74AP	I.C.(M)	TOSHIBA	
IC84	TC74HC273AP	I.C.(M)	TOSHIBA	
IC86	74AC04PC	I.C.(M)	NATIONAL SEMI	
IC87	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC88	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC89	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC90	TC74HC574AP	I.C.(M)	TOSHIBA	
IC91	TC74HC574AP	I.C.(M)	TOSHIBA	
IC100	IDT49FCT805P	I.C.(M)	IDT	
IC101	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC102	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC103	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC104	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC105	TC74HC245AP	I.C.(M)	TOSHIBA	
IC106	TC74HC245AP	I.C.(M)	TOSHIBA	
IC107	P16V8Q-15-0034	I.C.(M)	AMD	
IC107	SCV1205-020	IC SOCKET	20PIN	
IC108	TC74HC574AP	I.C.(M)	TOSHIBA	
IC109	TC74HC245AP	I.C.(M)	TOSHIBA	
IC110	TC74HC574AP	I.C.(M)	TOSHIBA	
IC111	74AC157PC	I.C.(M)	NATIONAL SEMICO	
R1	QRD161J-103	CARBON RESISTOR	10K	1/6W
R5	QRD161J-471	CARBON RESISTOR	470	1/6W
R6	QRD161J-471	CARBON RESISTOR	470	1/6W
R7	QRD161J-471	CARBON RESISTOR	470	1/6W
R8	QRD161J-471	CARBON RESISTOR	470	1/6W
R9	QRD161J-103	CARBON RESISTOR	10K	1/6W
R10	QRD161J-103	CARBON RESISTOR	10K	1/6W
R11	QRD161J-103	CARBON RESISTOR	10K	1/6W
R12	QRD161J-103	CARBON RESISTOR	10K	1/6W
R13	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R17	QRD161J-681	CARBON RESISTOR	680	1/6W
R18	QRD161J-681	CARBON RESISTOR	680	1/6W

Symbol No.	Part No.	Part Name	Description	
R19	QRD161J-681	CARBON RESISTOR	680	1/6W
R20	QRD161J-681	CARBON RESISTOR	680	1/6W
R21	QRD161J-681	CARBON RESISTOR	680	1/6W
R22	QRD161J-681	CARBON RESISTOR	680	1/6W
R23	QRD161J-681	CARBON RESISTOR	680	1/6W
R24	QRD161J-681	CARBON RESISTOR	680	1/6W
R25	QRD161J-681	CARBON RESISTOR	680	1/6W
R27	QRD161J-681	CARBON RESISTOR	680	1/6W
R28	QRD161J-681	CARBON RESISTOR	680	1/6W
R29	QRD161J-681	CARBON RESISTOR	680	1/6W
R30	QRD161J-681	CARBON RESISTOR	680	1/6W
RA1	QRB085J-471	RESISTOR ARRAY	470	
RA2	QRB085J-471	RESISTOR ARRAY	470	
RA3	QRB085J-471	RESISTOR ARRAY	470	
RA4	QRB085J-471	RESISTOR ARRAY	470	
RA5	QRB085J-471	RESISTOR ARRAY	470	
RA27	QRB085J-471	RESISTOR ARRAY	470	
RA28	QRB085J-471	RESISTOR ARRAY	470	
RA29	QRB085J-471	RESISTOR ARRAY	470	
C1	QCZ0206-104	CER.CAPACITOR	0.10	
C2	QCZ0206-104	CER.CAPACITOR	0.10	
C3	QCZ0206-104	CER.CAPACITOR	0.10	
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QCZ0206-104	CER.CAPACITOR	0.10	
C6	QCZ0206-104	CER.CAPACITOR	0.10	
C7	QCZ0206-104	CER.CAPACITOR	0.10	
C8	QCZ0206-104	CER.CAPACITOR	0.10	
C9	QCZ0206-104	CER.CAPACITOR	0.10	
C10	QCZ0206-104	CER.CAPACITOR	0.10	
C11	QCZ0206-104	CER.CAPACITOR	0.10	
C12	QCZ0206-104	CER.CAPACITOR	0.10	
C13	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QCZ0206-104	CER.CAPACITOR	0.10	
C16	QCZ0206-104	CER.CAPACITOR	0.10	
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C18	QCZ0206-104	CER.CAPACITOR	0.10	
C19	QCZ0206-104	CER.CAPACITOR	0.10	
C20	QCZ0206-104	CER.CAPACITOR	0.10	
C21	QCZ0206-104	CER.CAPACITOR	0.10	
C22	QCZ0206-104	CER.CAPACITOR	0.10	
C23	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
C25	QCZ0206-104	CER.CAPACITOR	0.10	
C26	QCZ0206-104	CER.CAPACITOR	0.10	
C27	QCZ0206-104	CER.CAPACITOR	0.10	
C28	QCZ0206-104	CER.CAPACITOR	0.10	
C29	QCZ0206-104	CER.CAPACITOR	0.10	
C30	QCZ0206-104	CER.CAPACITOR	0.10	
C31	QCZ0206-104	CER.CAPACITOR	0.10	
C32	QCZ0206-104	CER.CAPACITOR	0.10	
C33	QCZ0206-104	CER.CAPACITOR	0.10	
C34	QCZ0206-104	CER.CAPACITOR	0.10	
C35	QCZ0206-104	CER.CAPACITOR	0.10	
C36	QCZ0206-104	CER.CAPACITOR	0.10	
C37	QCZ0206-104	CER.CAPACITOR	0.10	
C38	QCZ0206-104	CER.CAPACITOR	0.10	
C39	QCZ0206-104	CER.CAPACITOR	0.10	

Symbol No.	Part No.	Part Name	Description
C40	QCZ0206–104	CER.CAPACITOR	0.10
C41	QCZ0206–104	CER.CAPACITOR	0.10
C42	QCZ0206–104	CER.CAPACITOR	0.10
C43	QCZ0206–104	CER.CAPACITOR	0.10
C44	QCZ0206–104	CER.CAPACITOR	0.10
C45	QCZ0206–104	CER.CAPACITOR	0.10
C46	QCZ0206–104	CER.CAPACITOR	0.10
C47	QCZ0206–104	CER.CAPACITOR	0.10
C48	QCZ0206–104	CER.CAPACITOR	0.10
C49	QCZ0206–104	CER.CAPACITOR	0.10
C50	QCZ0206–104	CER.CAPACITOR	0.10
C51	QCZ0206–104	CER.CAPACITOR	0.10
C52	QCZ0206–104	CER.CAPACITOR	0.10
C53	QCZ0206–104	CER.CAPACITOR	0.10
C54	QCZ0206–104	CER.CAPACITOR	0.10
C55	QCZ0206–104	CER.CAPACITOR	0.10
C56	QCZ0206–104	CER.CAPACITOR	0.10
C57	QCZ0206–104	CER.CAPACITOR	0.10
C58	QCZ0206–104	CER.CAPACITOR	0.10
C59	QCZ0206–104	CER.CAPACITOR	0.10
C60	QCZ0206–104	CER.CAPACITOR	0.10
C63	QCZ0206–104	CER.CAPACITOR	0.10
C64	QCZ0206–104	CER.CAPACITOR	0.10
C65	QCZ0206–104	CER.CAPACITOR	0.10
C66	QCZ0206–104	CER.CAPACITOR	0.10
C67	QCZ0206–104	CER.CAPACITOR	0.10
C68	QCZ0206–104	CER.CAPACITOR	0.10
C69	QCZ0206–104	CER.CAPACITOR	0.10
C70	QCZ0206–104	CER.CAPACITOR	0.10
C71	QCZ0206–104	CER.CAPACITOR	0.10
C72	QCZ0206–104	CER.CAPACITOR	0.10
C73	QCZ0206–104	CER.CAPACITOR	0.10
C74	QCZ0206–104	CER.CAPACITOR	0.10
C76	QCZ0206–104	CER.CAPACITOR	0.10
C77	QCZ0206–104	CER.CAPACITOR	0.10
C78	QCZ0206–104	CER.CAPACITOR	0.10
C79	QCZ0206–104	CER.CAPACITOR	0.10
C80	QCZ0206–104	CER.CAPACITOR	0.10
C81	QCZ0206–104	CER.CAPACITOR	0.10
C82	QCZ0206–104	CER.CAPACITOR	0.10
C83	QCZ0206–104	CER.CAPACITOR	0.10
C84	QCZ0206–104	CER.CAPACITOR	0.10
C85	QCZ0206–104	CER.CAPACITOR	0.10
C86	QCZ0206–104	CER.CAPACITOR	0.10
C87	QCZ0206–104	CER.CAPACITOR	0.10
C88	QCZ0206–104	CER.CAPACITOR	0.10
C89	QCZ0206–104	CER.CAPACITOR	0.10
C90	QCZ0206–104	CER.CAPACITOR	0.10
C91	QCZ0206–104	CER.CAPACITOR	0.10
C100	QCZ0206–104	CER.CAPACITOR	0.10
C101	QCZ0206–104	CER.CAPACITOR	0.10
C102	QCZ0206–104	CER.CAPACITOR	0.10
C103	QCZ0206–104	CER.CAPACITOR	0.10
C104	QCZ0206–104	CER.CAPACITOR	0.10
C105	QCZ0206–104	CER.CAPACITOR	0.10
C106	QCZ0206–104	CER.CAPACITOR	0.10
C107	QCZ0206–104	CER.CAPACITOR	0.10
C108	QCZ0206–104	CER.CAPACITOR	0.10
C109	QCZ0206–104	CER.CAPACITOR	0.10

Symbol No.	Part No.	Part Name	Description
C110	QCZ0206–104	CER.CAPACITOR	0.10
C111	QCZ0206–104	CER.CAPACITOR	0.10
C159	QCZ0206–104	CER.CAPACITOR	0.10
C160	QCZ0206–104	CER.CAPACITOR	0.10
S1	SCV2419–8103	DIP SW	DSK FILL DL
S2	SCV2419–8103	DIP SW	AUX 1/2 DL
S3	SCV2419–8103	DIP SW	WORD DL
S4	SCV2419–4103	DIP SW	DSK DL
S5	SCV1148–008	CONNECTOR	TEST
S6	SCV2419–4103	DIP SW	KEY OUT DL
S8	SCV1147–003	CONNECTOR	525/625
S9	SCV2419–8103	DIP SW	BKGD DL
S10	SCV1147–003	CONNECTOR	DITHER ON/OFF
CN1	SCV1704–200	CONNECTOR	200PIN
CN2	SCV1704–200	CONNECTOR	200PIN
P8	SCV1149–001	SHORT PLUG	
P10	SCV1149–001	SHORT PLUG	
P51	SCV1149–001	SHORT PLUG	
P52	SCV1149–001	SHORT PLUG	
P53	SCV1149–001	SHORT PLUG	

5.16 IF board assembly list [1][6]
SCK1122-00A [1][6]□□□□□□□

Symbol No.	Part No.	Part Name	Description	
IC1	TC74HC238AP	I.C.(M)	TOSHIBA	
IC3	P16V8Q-15-0035	I.C.(M)	AMD	
IC3	SCV1205-020	IC SOCKET	20PIN	
IC4	TC74HC245AP	I.C.(M)	TOSHIBA	
IC5	TC74HC245AP	I.C.(M)	TOSHIBA	
IC6	TC74HC245AP	I.C.(M)	TOSHIBA	
IC7	P16V8Q-15-0001	I.C.(M)	AMD	
IC7	SCV1205-020	IC SOCKET	20PIN	
IC8	TC74HC4515AP	I.C.(M)	TOSHIBA	
IC9	TC74HC4515AP	I.C.(M)	TOSHIBA	
IC10	TC74HC4515AP	I.C.(M)	TOSHIBA	
IC11	TC74HC4514AP	I.C.(M)	TOSHIBA	
IC12	TC74HC137AP	I.C.(M)	TOSHIBA	
IC13	TC74HC137AP	I.C.(M)	TOSHIBA	
IC14	TC74HC574AP	I.C.(M)	TOSHIBA	
IC15	EPM032-15-0012	I.C.(M)	ALTERA CORPORAT	
IC15	SDV0022-044	IC SOCKET	44PIN	
IC16	TC74HC4515AP	I.C.(M)	TOSHIBA	
IC17	TC74HC4515AP	I.C.(M)	TOSHIBA	
IC18	TC74HC4515AP	I.C.(M)	TOSHIBA	
IC19	TC74HC4515AP	I.C.(M)	TOSHIBA	
IC20	TC74HC14AP	I.C.(M)	TOSHIBA	
IC21	TD62083CP	I.C.(M)	TOSHIBA	
IC22	TD62083CP	I.C.(M)	TOSHIBA	
IC23	HD26LS31P	I.C.(M)	HITACHI	
IC24	LT1139CN	I.C.(M)	LINEAR TECHNOLO	
IC25	HD26LS31P	I.C.(M)	HITACHI	
IC26	HD26LS32P	I.C.(M)	HITACHI	
IC27	HD26LS32P	I.C.(M)	HITACHI	
IC28	PC-847	I.C.(M)	SHARP	
D1	MA165	DIODE	MATSUSHITA	
D2	MA165	DIODE	MATSUSHITA	
D3	MA165	DIODE	MATSUSHITA	
D4	MA165	DIODE	MATSUSHITA	
D5	MA165	DIODE	MATSUSHITA	
D6	MA165	DIODE	MATSUSHITA	
D7	MA165	DIODE	MATSUSHITA	
D8	MA165	DIODE	MATSUSHITA	
D9	MA165	DIODE	MATSUSHITA	
D10	MA165	DIODE	MATSUSHITA	
D11	MA165	DIODE	MATSUSHITA	
D12	MA165	DIODE	MATSUSHITA	
D13	MA165	DIODE	MATSUSHITA	
D14	MA165	DIODE	MATSUSHITA	
D15	MA165	DIODE	MATSUSHITA	
D16	MA165	DIODE	MATSUSHITA	
D17	MA165	DIODE	MATSUSHITA	
R1	QRV141F-1200	M.F.RESISTOR	120	1/4W
RA1	QRB045J-103	RESISTOR ARRAY	10K	
RA2	QRB045J-331	RESISTOR ARRAY	330	
C1	QEX41CM-156	E.CAPACITOR	15	16V
C3	QEX41CM-156	E.CAPACITOR	15	16V
C4	QEX41CM-156	E.CAPACITOR	15	16V
C5	QEX41CM-156	E.CAPACITOR	15	16V

Symbol No.	Part No.	Part Name	Description	
C6	QEX41CM-156	E.CAPACITOR	15	16V
C7	QEX41CM-156	E.CAPACITOR	15	16V
C8	QEX41CM-156	E.CAPACITOR	15	16V
C9	QEX41CM-156	E.CAPACITOR	15	16V
C10	QEX41CM-156	E.CAPACITOR	15	16V
C11	QEX41CM-156	E.CAPACITOR	15	16V
C12	QEX41CM-156	E.CAPACITOR	15	16V
C13	QEX41CM-156	E.CAPACITOR	15	16V
C14	QEX41CM-156	E.CAPACITOR	15	16V
C15	QEX41CM-156	E.CAPACITOR	15	16V
C16	QEX41CM-156	E.CAPACITOR	15	16V
C17	QEX41CM-156	E.CAPACITOR	15	16V
C18	QEX41CM-156	E.CAPACITOR	15	16V
C19	QEX41CM-156	E.CAPACITOR	15	16V
C20	QER41HM-105	E.CAPACITOR	1.0	50V
C21	QER41HM-105	E.CAPACITOR	1.0	50V
C22	QER41HM-105	E.CAPACITOR	1.0	50V
C23	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QEX41CM-156	E.CAPACITOR	15	16V
C25	QCZ0206-104	CER.CAPACITOR	0.10	
C26	QCZ0206-104	CER.CAPACITOR	0.10	
C27	QCZ0206-104	CER.CAPACITOR	0.10	
LC1	EXC-EMT271BC	EMI FILTER		
LC2	EXC-EMT271BC	EMI FILTER		
LC3	EXC-EMT271BC	EMI FILTER		
LC4	EXC-EMT271BC	EMI FILTER		
LC5	EXC-EMT271BC	EMI FILTER		
LC6	EXC-EMT271BC	EMI FILTER		
LC7	EXC-EMT271BC	EMI FILTER		
LC8	EXC-EMT271BC	EMI FILTER		
LC9	EXC-EMT271BC	EMI FILTER		
LC10	EXC-EMT271BC	EMI FILTER		
LC11	EXC-EMT271BC	EMI FILTER		
LC12	EXC-EMT271BC	EMI FILTER		
LC13	EXC-EMT271BC	EMI FILTER		
LC14	EXC-EMT271BC	EMI FILTER		
LC15	EXC-EMT271BC	EMI FILTER		
LC16	EXC-EMT271BC	EMI FILTER		
LC17	EXC-EMT271BC	EMI FILTER		
RY1	AG2313	RELAY		
RY2	AG2313	RELAY		
RY3	AG2313	RELAY		
RY4	AG2313	RELAY		
RY5	AG2313	RELAY		
RY6	AG2313	RELAY		
RY7	AG2313	RELAY		
RY8	AG2313	RELAY		
RY9	AG2313	RELAY		
RY10	AG2313	RELAY		
RY11	AG2313	RELAY		
RY12	AG2313	RELAY		
RY13	AG2313	RELAY		
S1	SCV0656-042-6S	SLIDE SWITCH		
S2	SCV0656-042-6S	SLIDE SWITCH		
S3	SCV0656-042-6S	SLIDE SWITCH		

Symbol No.	Part No.	Part Name	Description	
S4	SCV0656-042-6S	SLIDE SWITCH		
CN1	SCV1704-140	CONNECTOR	140PIN	
CN2	SCV1704-140	CONNECTOR	140PIN	
CN3	SCV2478-003	CONNECTOR	3PIN	
CN4	SCV2478-003	CONNECTOR	3PIN	
CN5	SCV2478-003	CONNECTOR	3PIN	
CN6	SCV2478-003	CONNECTOR	3PIN	
CN7	SCV2452-036	TERMINAL BLOCK	36PIN	

Symbol No.	Part No.	Part Name	Description	
IC1	SN74HC244N	I.C.(M)	TEXAS	
IC2	SN74HC74N	I.C.(M)	TEXAS	
IC3	SN74HC244N	I.C.(M)	TEXAS	
IC4	P16V8Q-15-0027	I.C.(M)	AMD	
IC4	SCV1205-020	IC SOCKET	20PIN	
IC5	TD74BC244P	I.C.(M)	TOSHIBA	
IC5	SCV2530-020	FERRITE BEAD	20PIN	
IC6	TC74HC574AP	I.C.(M)	TOSHIBA	
IC7	TC74HC574AP	I.C.(M)	TOSHIBA	
IC8	TC74HC574AP	I.C.(M)	TOSHIBA	
IC9	TC74HC574AP	I.C.(M)	TOSHIBA	
IC10	EPM032-15-0007	I.C.(M)	ALTERA CORPORAT	
IC10	SDV0022-044	IC SOCKET	44PIN	
IC12	74AC157PC	I.C.(M)	NATIONAL SEMICO	
IC13	74AC157PC	I.C.(M)	NATIONAL SEMICO	
IC15	EPM032-15-0014	I.C.(M)	ALTERA CORPORAT	
IC15	SDV0022-044	IC SOCKET	44PIN	
IC16	TC74HC00AP	I.C.(M)	TOSHIBA	
IC17	74AC574PC	I.C.(M)	NATIONAL SEMICO	
IC18	74AC157PC	I.C.(M)	NATIONAL SEMICO	
IC19	74AC157PC	I.C.(M)	NATIONAL SEMICO	
IC20	TD74BC574P	I.C.(M)	TOSHIBA	
IC21	EPM032-15-0009	I.C.(M)	ALTERA CORPORAT	
IC21	SDV0022-044	IC SOCKET	44PIN	
IC22	SN74ABT574N	I.C.(M)	TEXAS	
IC23	SN74ABT574N	I.C.(M)	TEXAS	
IC24	SN74ABT574N	I.C.(M)	TEXAS	
IC25	SN74ABT574N	I.C.(M)	TEXAS	
IC26	SN74ABT574N	I.C.(M)	TEXAS	
IC27	SN74ABT574N	I.C.(M)	TEXAS	
IC28	SN74ABT574N	I.C.(M)	TEXAS	
D1	MA165	DIODE	MATSUSHITA	
R4	QRD161J-103	CARBON RESISTOR	10K	1/6W
R5	QRD161J-103	CARBON RESISTOR	10K	1/6W
R6	QRD161J-103	CARBON RESISTOR	10K	1/6W
R7	QRD161J-103	CARBON RESISTOR	10K	1/6W
R8	QRD161J-103	CARBON RESISTOR	10K	1/6W
R9	QRD161J-103	CARBON RESISTOR	10K	1/6W
R10	QRD161J-103	CARBON RESISTOR	10K	1/6W
R11	QRD161J-103	CARBON RESISTOR	10K	1/6W
R12	QRD161J-103	CARBON RESISTOR	10K	1/6W
R13	QRD161J-103	CARBON RESISTOR	10K	1/6W
R14	QRD161J-103	CARBON RESISTOR	10K	1/6W
R15	QRD161J-103	CARBON RESISTOR	10K	1/6W
R16	QRD161J-103	CARBON RESISTOR	10K	1/6W
R17	QRD161J-103	CARBON RESISTOR	10K	1/6W
R18	QRD161J-103	CARBON RESISTOR	10K	1/6W
R19	QRD161J-104	CARBON RESISTOR	100K	1/6W
R20	QRD161J-101	CARBON RESISTOR	100	1/6W
R21	QRD161J-331	CARBON RESISTOR	330	1/6W
R22	QRD161J-151	CARBON RESISTOR	150	1/6W
R100	QRD161J-0R0	CARBON RESISTOR	0	1/6W
RA1	QRB085J-103	RESISTOR ARRAY	10K	

Symbol No.	Part No.	Part Name	Description	
C1	QEX41CM-156	E.CAPACITOR	15	16V
C2	QEX41CM-156	E.CAPACITOR	15	16V
C3	QEX41CM-156	E.CAPACITOR·	15	16V
C4	QEX41CM-156	E.CAPACITOR	15	16V
C5	QEX41CM-156	E.CAPACITOR	15	16V
C6	QEX41CM-156	E.CAPACITOR	15	16V
C7	QEX41CM-156	E.CAPACITOR	15	16V
C8	QEX41CM-156	E.CAPACITOR	15	16V
C9	QEX41CM-156	E.CAPACITOR	15	16V
C10	QEX41CM-156	E.CAPACITOR	15	16V
C11	QCZ0206-104	CER.CAPACITOR	0.10	
C12	QCZ0206-104	CER.CAPACITOR	0.10	
C13	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QCS11HJ-470	CER.CAPACITOR	47P	50V
C16	QCS11HJ-470	CER.CAPACITOR	47P	50V
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C18	QCZ0206-104	CER.CAPACITOR	0.10	
C19	QCZ0206-104	CER.CAPACITOR	0.10	
C20	QCZ0206-104	CER.CAPACITOR	0.10	
C21	QCZ0206-104	CER.CAPACITOR	0.10	
C22	QCZ0206-104	CER.CAPACITOR	0.10	
C25	QCZ0206-104	CER.CAPACITOR	0.10	
C26	QCZ0206-104	CER.CAPACITOR	0.10	
C27	QCZ0206-104	CER.CAPACITOR	0.10	
C28	QCZ0206-104	CER.CAPACITOR	0.10	
C29	QCZ0206-104	CER.CAPACITOR	0.10	
C31	QCZ0206-104	CER.CAPACITOR	0.10	
C32	QCZ0206-104	CER.CAPACITOR	0.10	
S1	SCV2419-4103	DIP SW	DATA OUT TIMING	
S2	SSV2381	SLIDE SWITCH	DITHER ON/OFF	
CN1	SCV1704-140	CONNECTOR	140PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
TP3	SQMX001-001	TEST POINT		

Symbol No.	Part No.	Part Name	Description	
IC1	TD74BC244P	I.C.(M)	TOSHIBA	
IC1	SCV2530-020	FERRITE BEAD		
IC2	SN74HC244N	I.C.(M)	TEXAS	
IC3	SN74HC244N	I.C.(M)	TEXAS	
IC4	74AC04PC	I.C.(M)	NATIONAL SEMI	
IC5	TC74AC164P	I.C.(M)	TOSHIBA	
IC6	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC7	74AC163PC	I.C.(M)	NATIONAL SEMICO	
IC8	74AC163PC	I.C.(M)	NATIONAL SEMICO	
IC9	74AC163PC	I.C.(M)	NATIONAL SEMICO	
IC10	P16V8Q-15-0025	I.C.(M)	AMD	
IC10	SCV1205-020	IC SOCKET	20PIN	
IC11	SCV2431-001	I.C.(M)	WAFER SCALE INT	
IC11	SCV1205-024	IC SOCKET	24PIN	
IC12	SCV2432-001	I.C.(M)	WAFER SCALE INT	
IC12	SCV1205-024	IC SOCKET	24PIN	
IC13	74AC574PC	I.C.(M)	NATIONAL SEMICO	
IC14	74AC574PC	I.C.(M)	NATIONAL SEMICO	
IC15	74AC157PC	I.C.(M)	NATIONAL SEMICO	
IC16	74AC157PC	I.C.(M)	NATIONAL SEMICO	
IC17	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC18	74AC163PC	I.C.(M)	NATIONAL SEMICO	
IC19	74AC163PC	I.C.(M)	NATIONAL SEMICO	
IC20	74AC163PC	I.C.(M)	NATIONAL SEMICO	
IC21	P20V8Q-15-0004	I.C.(M)	AMD	
IC21	SCV1205-024	IC SOCKET	24PIN	
IC22	SN74ABT574N	I.C.(M)	TEXAS	
IC23	SN74ABT574N	I.C.(M)	TEXAS	
IC24	SN74ABT574N	I.C.(M)	TEXAS	
IC25	SN74ABT574N	I.C.(M)	TEXAS	
IC26	SN74ABT574N	I.C.(M)	TEXAS	
IC27	SN74ABT574N	I.C.(M)	TEXAS	
IC28	SN74ABT574N	I.C.(M)	TEXAS	
IC29	P16V8Q-15-0026	I.C.(M)	AMD	
IC29	SCV1205-020	IC SOCKET	20PIN	
IC30	P22V10H25-0008	I.C.(M)	AMD	
IC30	SCV1205-024	IC SOCKET	24PIN	
IC31	74AC74PC	I.C.(M)	NATIONAL SEMI	
D1	MA165	DIODE	MATSUSHITA	
R1	QRD161J-104	CARBON RESISTOR	100K	1/6W
R3	QRD161J-151	CARBON RESISTOR	150	1/6W
R4	QRD161J-101	CARBON RESISTOR	100	1/6W
R5	QRD161J-103	CARBON RESISTOR	10K	1/6W
R6	QRD161J-103	CARBON RESISTOR	10K	1/6W
R7	QRD161J-103	CARBON RESISTOR	10K	1/6W
R8	QRD161J-103	CARBON RESISTOR	10K	1/6W
R9	QRD161J-103	CARBON RESISTOR	10K	1/6W
R10	QRD161J-103	CARBON RESISTOR	10K	1/6W
R11	QRD161J-103	CARBON RESISTOR	10K	1/6W
R12	QRD161J-103	CARBON RESISTOR	10K	1/6W
R13	QRD161J-103	CARBON RESISTOR	10K	1/6W
R14	QRD161J-103	CARBON RESISTOR	10K	1/6W
R15	QRD161J-103	CARBON RESISTOR	10K	1/6W
R16	QRD161J-103	CARBON RESISTOR	10K	1/6W
R17	QRD161J-103	CARBON RESISTOR	10K	1/6W
R18	QRD161J-103	CARBON RESISTOR	10K	1/6W
R19	QRD161J-103	CARBON RESISTOR	10K	1/6W

Symbol No.	Part No.	Part Name	Description	
R20	QRD161J-103	CARBON RESISTOR	10K	1/6W
R21	QRD161J-103	CARBON RESISTOR	10K	1/6W
R22	QRD161J-103	CARBON RESISTOR	10K	1/6W
R23	QRD161J-103	CARBON RESISTOR	10K	1/6W
R24	QRD161J-103	CARBON RESISTOR	10K	1/6W
R25	QRD161J-103	CARBON RESISTOR	10K	1/6W
C1	QCZ0206-104	CER.CAPACITOR	0.10	
C2	QCZ0206-104	CER.CAPACITOR	0.10	
C3	QCZ0206-104	CER.CAPACITOR	0.10	
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QCZ0206-104	CER.CAPACITOR	0.10	
C6	QCZ0206-104	CER.CAPACITOR	0.10	
C7	QCZ0206-104	CER.CAPACITOR	0.10	
C8	QCZ0206-104	CER.CAPACITOR	0.10	
C9	QCZ0206-104	CER.CAPACITOR	0.10	
C10	QCZ0206-104	CER.CAPACITOR	0.10	
C11	QCZ0206-104	CER.CAPACITOR	0.10	
C12	QCZ0206-104	CER.CAPACITOR	0.10	
C13	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QCZ0206-104	CER.CAPACITOR	0.10	
C15	QCZ0206-104	CER.CAPACITOR	0.10	
C16	QCZ0206-104	CER.CAPACITOR	0.10	
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C18	QCZ0206-104	CER.CAPACITOR	0.10	
C19	QCZ0206-104	CER.CAPACITOR	0.10	
C20	QCZ0206-104	CER.CAPACITOR	0.10	
C21	QCZ0206-104	CER.CAPACITOR	0.10	
C22	QCZ0206-104	CER.CAPACITOR	0.10	
C23	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
C25	QCZ0206-104	CER.CAPACITOR	0.10	
C26	QCZ0206-104	CER.CAPACITOR	0.10	
C27	QCZ0206-104	CER.CAPACITOR	0.10	
C28	QCZ0206-104	CER.CAPACITOR	0.10	
C29	QCZ0206-104	CER.CAPACITOR	0.10	
C30	QCZ0206-104	CER.CAPACITOR	0.10	
C31	QER41CM-476	E.CAPACITOR	47	16V
C32	QCZ0206-104	CER.CAPACITOR	0.10	
C34	QCS11HJ-470	CER.CAPACITOR	47P	50V
S1	SCV1682-001	ROTARY SWICH	MULT PLX TIMING	
S2	SCV2419-4103	DIP SW	WAVE SEL	
CN1	SCV1704-140	CONNECTOR	140PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		

Symbol No.	Part No.	Part Name	Description	
IC1	TC74HC245AF	I.C.(M)	TOSHIBA	
IC2	TC74HC245AF	I.C.(M)	TOSHIBA	
IC3	TDA8708AT	I.C.(M)	PHILIPS	
IC4	SAA7157T	I.C.(M)	PHILIPS	
IC5	P16V8Q-15-0021	I.C.(M)	AMD	
IC5	SCV1205-020	IC SOCKET	20PIN	
IC6	SAA7199BWP	I.C.(M)	PHILIPS	
IC6	SDV0022-084	IC SOCKET	84PIN	
IC7	TA78L005AP	I.C.(M)	TOSHIBA	
IC8	TA78L005AP	I.C.(M)	TOSHIBA	
IC9	TC74HC04AF	I.C.(M)	TOSHIBA	
IC10	VC2100	I.C.(M)	MATSUSHITA	
IC11	P16V8Q-15-0022	I.C.(M)	AMD	
IC11	SCV1205-020	IC SOCKET	20PIN	
IC12	UPD9316GB	I.C.(M)	NEC	
IC13	74AC574SJ	I.C.(M)	NATIONAL SEMICO	
IC14	74AC175SJ	I.C.(M)	NATIONAL SEMICO	
IC15	MSM514212-34ZS	I.C.(M)	OKI	
IC16	TC74AC74F	I.C.(M)	TOSHIBA	
IC17	TC74AC74F	I.C.(M)	TOSHIBA	
IC18	TC74AC112F	I.C.(M)	TOSHIBA	
IC19	P16V8Q-15-0023	I.C.(M)	AMD	
IC19	SCV1205-020	IC SOCKET	20PIN	
IC20	TC74HC574AF	I.C.(M)	TOSHIBA	
IC21	TC74HC164AF	I.C.(M)	TOSHIBA	
IC22	MSM514212-34ZS	I.C.(M)	OKI	
IC23	TC74HC574AF	I.C.(M)	TOSHIBA	
IC24	IDT49FCT805P	I.C.(M)	IDT	
IC25	TC74HC164AF	I.C.(M)	TOSHIBA	
IC26	IDT49FCT805P	I.C.(M)	IDT	
IC27	TD74BC244AF	I.C.(M)	TOSHIBA	
IC28	TA78L005AP	I.C.(M)	TOSHIBA	
IC29	NJM79L05A	I.C.(M)	JRC	
IC30	IDT49FCT805P	I.C.(M)	IDT	
IC31	MC14577CP	I.C.(M)	MOTOROLA	
IC32	MC14577CP	I.C.(M)	MOTOROLA	
IC33	NJM7809FA	I.C.(M)	JRC	
IC34	TC74HC04AF	I.C.(M)	TOSHIBA	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q2	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q3	MSD1819A(R)	TRANSISTER	MOTOROLA	
D1	MA143A	DIODE	MATSUSHITA	
R1	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R2	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R3	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R4	NRSA02J-331	M.G.RESISTOR	330	1/10W
R5	NRSA02J-681	M.G.RESISTOR	680	1/10W
R6	NRSA02J-222	M.G.RESISTOR	2.2K	1/10W
R7	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R8	NRSA02J-104	M.G.RESISTOR	100K	1/10W
R9	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R10	NRSA02J-393	M.G.RESISTOR	39K	1/10W
R11	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R12	NRSA02J-823	M.G.RESISTOR	82K	1/10W
R13	NRSA02J-122	M.G.RESISTOR	1.2K	1/10W

Symbol No.	Part No.	Part Name	Description	
R14	NRSA02J-123	M.G.RESISTOR	12K	1/10W
R15	NRSA02J-123	M.G.RESISTOR	12K	1/10W
R16	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R17	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R18	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R19	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R20	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R21	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R22	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R23	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R24	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R25	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R26	NRVA02D-8200	M.F.RESISTOR	820	1/10W
R27	NRVA02D-4700	M.F.RESISTOR	470	1/10W
R28	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R29	NRVA02D-5600	M.F.RESISTOR	560	1/10W
R30	NRVA02D-8200	M.F.RESISTOR	820	1/10W
R31	NRVA02D-4700	M.F.RESISTOR	470	1/10W
R32	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R33	NRVA02D-5600	M.F.RESISTOR	560	1/10W
R34	NRVA02D-1501	M.F.RESISTOR	1.50K	1/10W
R35	NRVA02D-1501	M.F.RESISTOR	1.50K	1/10W
R36	NRVA02D-8200	M.F.RESISTOR	820	1/10W
R37	NRVA02D-4700	M.F.RESISTOR	470	1/10W
R38	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R39	NRVA02D-5600	M.F.RESISTOR	560	1/10W
R40	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R41	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R42	NRVA02D-1501	M.F.RESISTOR	1.50K	1/10W
R43	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R51	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R52	NRSA02J-562	M.G.RESISTOR	5.6K	1/10W
R54	NRSA02J-154	M.G.RESISTOR	150K	1/10W
R55	NRSA02J-470	M.G.RESISTOR	47	1/10W
R56	NRSA02J-271	M.G.RESISTOR	270	1/10W
R58	NRSA02J-122	M.G.RESISTOR	1.2K	1/10W
R60	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R61	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R62	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R63	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R64	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R65	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R66	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R67	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R68	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R69	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R70	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R71	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R72	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R73	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R74	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R75	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R76	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R77	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R78	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
C1	QER41CM-476	E.CAPACITOR	47	16V
C2	NCB21HK-473	CER.CAPACITOR	0.047	50V
C3	NCB21HK-473	CER.CAPACITOR	0.047	50V

Symbol No.	Part No.	Part Name	Description	
C5	QER41HM-105	E.CAPACITOR	1.0	50V
C6	NCT03CH-270	CER.CAPACITOR	27P	50V
C7	NCT03CH-680	CER.CAPACITOR	68P	50V
C8	NCT03CH-270	CER.CAPACITOR	27P	50V
C9	QEPA1CM-106	E.CAPACITOR	10	16V
C10	QEPA1CM-106	E.CAPACITOR	10	16V
C11	QFN41HJ-104	MYLAR CAPACITOR	0.10	50V
C12	QFN41HJ-224	MYLAR CAPACITOR	0.22	50V
C13	NCT03CH-120	CER.CAPACITOR	12P	50V
C14	NCT03CH-120	CER.CAPACITOR	12P	50V
C15	NCF21EZ-104	CER.CAPACITOR	0.10	25V
C16	QEX41CM-156	E.CAPACITOR	15	16V
C17	NCF21EZ-104	CER.CAPACITOR	0.10	25V
C18	NCB21HK-473	CER.CAPACITOR	0.047	50V
C19	QER41CM-476	E.CAPACITOR	47	16V
C20	QEX41CM-156	E.CAPACITOR	15	16V
C21	QER41CM-476	E.CAPACITOR	47	16V
C22	QEX41CM-156	E.CAPACITOR	15	16V
C23	QEX41CM-156	E.CAPACITOR	15	16V
C24	QEPA1CM-106	E.CAPACITOR	10	16V
C25	QER41CM-476	E.CAPACITOR	47	16V
C26	QEX41CM-156	E.CAPACITOR	15	16V
C27	QER41CM-476	E.CAPACITOR	47	16V
C28	QER41CM-476	E.CAPACITOR	47	16V
C29	QER41CM-476	E.CAPACITOR	47	16V
C30	QEX41CM-156	E.CAPACITOR	15	16V
C31	QFN41HJ-102	MYLAR CAPACITOR	0.001	50V
C32	NCT03CH-680	CER.CAPACITOR	68P	50V
C34	NCB21HK-473	CER.CAPACITOR	0.047	50V
C35	NCT03CH-270	CER.CAPACITOR	27P	50V
C36	NCT03CH-221	CER.CAPACITOR	220P	50V
C37	QER41HM-474	E.CAPACITOR	0.47	50V
C38	QER41HM-105	E.CAPACITOR	1.0	50V
C39	NCT03CH-221	CER.CAPACITOR	220P	50V
C40	NCT03CH-221	CER.CAPACITOR	220P	50V
C41	NCB21HK-473	CER.CAPACITOR	0.047	50V
C42	QER41CM-476	E.CAPACITOR	47	16V
C43	QER41HM-474	E.CAPACITOR	0.47	50V
C44	QER41HM-474	E.CAPACITOR	0.47	50V
C45	QER41HM-474	E.CAPACITOR	0.47	50V
C46	QEPA1HM-105	E.CAPACITOR	1.0	50V
C47	QEX41CM-156	E.CAPACITOR	15	16V
C48	NCT03CH-100	CER.CAPACITOR	10P	50V
C49	NCT03CH-390	CER.CAPACITOR	39P	50V
C50	NCT03CH-221	CER.CAPACITOR	220P	50V
C51	QFN41HJ-103	MYLAR CAPACITOR	0.010	50V
C52	NCB21HK-473	CER.CAPACITOR	0.047	50V
C53	NCB21HK-473	CER.CAPACITOR	0.047	50V
C54	NCB21HK-473	CER.CAPACITOR	0.047	50V
C55	QEX41CM-156	E.CAPACITOR	15	16V
C56	NCB21HK-473	CER.CAPACITOR	0.047	50V
C57	NCB21HK-473	CER.CAPACITOR	0.047	50V
C58	NCB21HK-473	CER.CAPACITOR	0.047	50V
C59	NCB21HK-473	CER.CAPACITOR	0.047	50V
C60	QEX41CM-156	E.CAPACITOR	15	16V
C61	NCB21HK-473	CER.CAPACITOR	0.047	50V
C62	QEX41CM-156	E.CAPACITOR	15	16V
C63	NCB21HK-473	CER.CAPACITOR	0.047	50V
C64	NCB21HK-473	CER.CAPACITOR	0.047	50V

Symbol No.	Part No.	Part Name	Description	
C65	QEX41CM-156	E.CAPACITOR	15	16V
C66	QEX41CM-156	E.CAPACITOR	15	16V
C67	NCB21HK-473	CER.CAPACITOR	0.047	50V
C68	QER41CM-476	E.CAPACITOR	47	16V
C69	QER41CM-476	E.CAPACITOR	47	16V
C70	QER41CM-476	E.CAPACITOR	47	16V
C71	QER41CM-476	E.CAPACITOR	47	16V
C72	NCB21HK-473	CER.CAPACITOR	0.047	50V
C73	NCB21HK-473	CER.CAPACITOR	0.047	50V
C74	NCB21HK-473	CER.CAPACITOR	0.047	50V
C75	NCB21HK-473	CER.CAPACITOR	0.047	50V
C76	NCB21HK-473	CER.CAPACITOR	0.047	50V
C77	QER41CM-476	E.CAPACITOR.	47	16V
C78	NCB21HK-473	CER.CAPACITOR	0.047	50V
C79	QER41CM-476	E.CAPACITOR	47	16V
C80	NCB21HK-473	CER.CAPACITOR	0.047	50V
C81	NCB21HK-473	CER.CAPACITOR	0.047	50V
C82	QER41CM-476	E.CAPACITOR	47	16V
C83	QER41CM-476	E.CAPACITOR	47	16V
C84	NCB21HK-473	CER.CAPACITOR	0.047	50V
C85	NCB21HK-473	CER.CAPACITOR	0.047	50V
C86	QEX41CM-156	E.CAPACITOR	15	16V
C90	NCT03CH-101	CER.CAPACITOR	100P	50V
C91	NCB21HK-473	CER.CAPACITOR	0.047	50V
VC1	QAT3120-200	TRIM.CAPACITOR	24MHz	
L1	SCV0331-220	PEAKING COIL	22μH	
L2	SCV0331-220	PEAKING COIL	22μH	
L3	SCV0331-5R6	PEAKING COIL	5.6μH	
L4	SCV0331-680	PEAKING COIL	68μH	
L5	SCV0331-101	PEAKING COIL	100μH	
LC1	SCV2411-001	LPF	5MHz	
X1	SCV2414-001	CRYSTAL	24.576MHz	
S1	SCV2451-001	SWITCH	N/P	
S2	SCV2451-001	SWITCH	10/20	
S3	SCV2451-001	SWITCH	N/P	
CN1	SCV1929-100	CONNECTOR	100PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
TP3	SQMX001-001	TEST POINT		
TP4	SQMX001-001	TEST POINT		
TP5	SQMX001-001	TEST POINT		
JK1	SSV1306-001	BNC CONNECTOR	GENLOCK IN	
JK2	SSV1306-001	BNC CONNECTOR	THROUGH OUT	
JK3	SSV1306-001	BNC CONNECTOR	BB1	
JK4	SSV1306-001	BNC CONNECTOR	BB2	
JK5	SSV1306-001	BNC CONNECTOR	BB3	

Symbol No.	Part No.	Part Name	Description	
IC1	74F86SJL	I.C.(M)	NATIONAL SEMICO	
IC3	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC4	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC5	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC6	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC7	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC8	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC9	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC10	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC11	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC12	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC13	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC14	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC15	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC16	SN74ABT821NSEL	I.C.(M)	TEXAS	
R1	NRSA02J-331	M.G.RESISTOR	330	1/10W
R16	NRSA02J-331	M.G.RESISTOR	330	1/10W
R17	NRSA02J-331	M.G.RESISTOR	330	1/10W
RA11	QRB055J-221	RESISTOR ARRAY	220	
RA12	QRB055J-221	RESISTOR ARRAY	220	
RA13	QRB055J-221	RESISTOR ARRAY	220	
RA14	QRB055J-221	RESISTOR ARRAY	220	
RA15	QRB055J-221	RESISTOR ARRAY	220	
RA16	QRB055J-221	RESISTOR ARRAY	220	
RA17	QRB055J-221	RESISTOR ARRAY	220	
RA21	QRB055J-221	RESISTOR ARRAY	220	
RA22	QRB055J-221	RESISTOR ARRAY	220	
RA23	QRB055J-221	RESISTOR ARRAY	220	
RA24	QRB055J-221	RESISTOR ARRAY	220	
RA25	QRB055J-221	RESISTOR ARRAY	220	
RA26	QRB055J-221	RESISTOR ARRAY	220	
RA27	QRB055J-221	RESISTOR ARRAY	220	
C1	NCB21EK-473	CER.CAPACITOR	0.047	25V
C3	NCB21EK-473	CER.CAPACITOR	0.047	25V
C4	NCB21EK-473	CER.CAPACITOR	0.047	25V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NCB21EK-473	CER.CAPACITOR	0.047	25V
C7	NCB21EK-473	CER.CAPACITOR	0.047	25V
C8	NCB21EK-473	CER.CAPACITOR	0.047	25V
C9	NCB21EK-473	CER.CAPACITOR	0.047	25V
C10	NCB21EK-473	CER.CAPACITOR	0.047	25V
C11	NCB21EK-473	CER.CAPACITOR	0.047	25V
C12	NCB21EK-473	CER.CAPACITOR	0.047	25V
C13	NCB21EK-473	CER.CAPACITOR	0.047	25V
C14	NCB21EK-473	CER.CAPACITOR	0.047	25V
C15	NCB21EK-473	CER.CAPACITOR	0.047	25V
C16	NCB21EK-473	CER.CAPACITOR	0.047	25V
CN1	SCV1705-200	CONNECTOR	200PIN	
CN3	SCV1705-140	CONNECTOR	140PIN	

5.21 BUFFER2 board assembly list ②①
SCK2387-01-00A

②①☐☐☐☐☐☐

Symbol No.	Part No.	Part Name	Description	
IC1	74F86SJL	I.C.(M)	NATIONAL SEMICO	
IC3	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC4	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC5	SN74ABT821NSEL	I.C.(M)	TEXAS	
IC6	SN74ABT821NSEL	I.C.(M)	TEXAS	
R1	NRSA02J-331	M.G.RESISTOR	330	1/10W
R6	NRSA02J-331	M.G.RESISTOR	330	1/10W
R7	NRSA02J-331	M.G.RESISTOR	330	1/10W
RA1	QRB055J-221	RESISTOR ARRAY	220	
RA2	QRB055J-221	RESISTOR ARRAY	220	
RA4	QRB055J-221	RESISTOR ARRAY	220	
RA5	QRB055J-221	RESISTOR ARRAY	220	
C1	NCB21EK-473	CER.CAPACITOR	0.047	25V
C3	NCB21EK-473	CER.CAPACITOR	0.047	25V
C4	NCB21EK-473	CER.CAPACITOR	0.047	25V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NCB21EK-473	CER.CAPACITOR	0.047	25V
CN2	SCV1705-200	CONNECTOR	200PIN	
CN4	SCV1705-140	CONNECTOR	140PIN	

5.22 JOINT board assembly list ②②
SCK2387-02-00A

②②☐☐☐☐☐☐

Symbol No.	Part No.	Part Name	Description
CN1	SCV1705-200	CONNECTOR	200PIN
CN2	SCV1705-140	CONNECTOR	140PIN

5.23 ACO board (optional) assembly list ②③
SCK2389-C0A

②③☐☐☐☐☐☐

Symbol No.	Part No.	Part Name	Description	
IC1	NJM79L05A	I.C.(M)	JRC	
IC2	LT1193CN8	I.C.(M)	LINEAR TECHNOLO	
IC3	TA78L005AP	I.C.(M)	TOSHIBA	
IC4	NJM79L05A	I.C.(M)	JRC	
IC5	LT1193CN8	I.C.(M)	LINEAR TECHNOLO	
IC6	TA78L005AP	I.C.(M)	TOSHIBA	
IC7	LT1193CN8	I.C.(M)	LINEAR TECHNOLO	
IC8	TD74BC574P	I.C.(M)	TOSHIBA	
IC9	EPM032-15-0015	I.C.(M)	ALTERA	
IC9	SDV0022-044	IC SOCKET	44PIN	
IC10	UPD42101C-3	I.C.(M)	NEC	
IC11	74AC175PC	I.C.(M)	NATIONAL SEMICO	
IC12	IDT49FCT805P	I.C.(M)	IDT	
IC12	SCV2530-020	FERRITE BEAD		
IC13	NJM7809FA	I.C.(M)	JRC	
IC14	SM5830P	I.C.(M)	NPC	
IC15	P20V8Q-15-0003	I.C.(M)	AMD	
IC15	SCV1205-024	IC SOCKET	24PIN	
IC16	TMC2242AR2C	I.C.(M)	RAYTHEON	
IC16	SDV0022-044	IC SOCKET	44PIN	
IC17	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC18	P16V8Q-15-0018	I.C.(M)	AMD	
IC18	SCV1205-020	IC SOCKET	20PIN	
IC20	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC21	MB40968P-G-SH	I.C.(M)	FUJITSU	
IC22	TMC2242AR2C	I.C.(M)	RAYTHEON	
IC22	SDV0022-044	IC SOCKET	44PIN	
IC23	74AC574PC	I.C.(M)	NATIONAL SEMICO	
IC24	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC25	SCV2449-001	I.C.(M)	WAFER SCALE INT	
IC25	SCV1205-024	IC SOCKET	24PIN	
IC26	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC27	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC28	MB40968P-G-SH	I.C.(M)	FUJITSU	
IC29	TMC2242AR2C	I.C.(M)	RAYTHEON	
IC29	SDV0022-044	IC SOCKET	44PIN	
IC30	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC31	SCV2450-001	I.C.(M)	WAFER SCALE INT	
IC31	SCV1205-024	I.C.(M)	24PIN	
IC32	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC33	TD74BC574P	I.C.(M)	TOSHIBA	
IC34	TA78L005AP	I.C.(M)	TOSHIBA	
IC35	TA78L005AP	I.C.(M)	TOSHIBA	
IC36	P20V8Q-15-0003	I.C.(M)	AMD	
IC36	SCV1205-024	IC SOCKET	24PIN	
IC37	P20V8Q-15-0003	I.C.(M)	AMD	
IC37	SCV1205-024	IC SOCKET	24PIN	
Q1	2SC1570NP(F)	TRANSISTOR	SANYO	
Q2	2SC1570NP(F)	TRANSISTOR	SANYO	
Q3	2SC1570NP(F)	TRANSISTOR	SANYO	
Q4	2SC1570NP(F)	TRANSISTOR	SANYO	
Q5	2SA1309A(RS)	TRANSISTOR	MATSUSHITA	
Q6	2SC1570NP(F)	TRANSISTOR	SANYO	
R1	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R2	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R3	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R4	QRD161J-102	CARBON RESISTOR	1.0K	1/6W

Symbol No.	Part No.	Part Name	Description	
R5	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R6	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R7	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R8	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R9	QRD161J-103	CARBON RESISTOR	10K	1/6W
R11	QRD161J-103	CARBON RESISTOR	10K	1/6W
R12	QRD161J-103	CARBON RESISTOR	10K	1/6W
R13	QRD161J-103	CARBON RESISTOR	10K	1/6W
R14	QRD161J-103	CARBON RESISTOR	10K	1/6W
R15	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R16	QRD161J-331	CARBON RESISTOR	330	1/6W
R17	QRD161J-331	CARBON RESISTOR	330	1/6W
R18	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R19	QRD161J-331	CARBON RESISTOR	330	1/6W
R20	QRD161J-331	CARBON RESISTOR	330	1/6W
R21	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R22	QRD161J-331	CARBON RESISTOR	330	1/6W
R23	QRD161J-331	CARBON RESISTOR	330	1/6W
R24	QRV141F-2702	M.F.RESISTOR	27.0K	1/4W
R25	QRV141F-1203	M.F.RESISTOR	120K	1/4W
R26	QRV141F-1501	M.F.RESISTOR	1.50K	1/4W
R27	QRV141F-1202	M.F.RESISTOR	12.0K	1/4W
R28	QRV141F-1501	M.F.RESISTOR	1.50K	1/4W
R29	QRV141F-8202	M.F.RESISTOR	82.0K	1/4W
R30	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R31	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R32	QRD161J-103	CARBON RESISTOR	10K	1/6W
R33	QRD161J-182	CARBON RESISTOR	1.8K	1/6W
R34	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R35	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R36	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R37	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R38	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R39	QRV141F-4700	M.F.RESISTOR	470	1/4W
R40	QRV141F-8201	M.F.RESISTOR	8.20K	1/4W
R41	QRV141F-8200	M.F.RESISTOR	820	1/4W
R42	QRV141F-5601	M.F.RESISTOR	5.60K	1/4W
R43	QRV141F-2700	M.F.RESISTOR	270	1/4W
R44	QRV141F-3301	M.F.RESISTOR	3.30K	1/4W
R45	QRV141F-5600	M.F.RESISTOR	560	1/4W
R46	QRV141F-3301	M.F.RESISTOR	3.30K	1/4W
R47	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R48	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R49	QRD161J-392	CARBON RESISTOR	3.9K	1/6W
R50	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R51	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R52	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R53	QRD161J-681	CARBON RESISTOR	680	1/6W
R54	QRV141F-8200	M.F.RESISTOR	820	1/4W
R55	QRV141F-3302	M.F.RESISTOR	33.0K	1/4W
R56	QRV141F-1201	M.F.RESISTOR	1.20K	1/4W
R57	QRV141F-8201	M.F.RESISTOR	8.20K	1/4W
R58	QRV141F-3300	M.F.RESISTOR	330	1/4W
R60	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R61	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R62	QRD161J-681	CARBON RESISTOR	680	1/6W
R63	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R64	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R65	QRV141F-8200	M.F.RESISTOR	820	1/4W

Symbol No.	Part No.	Part Name	Description	
R66	QRV141F-3302	M.F.RESISTOR	33.0K	1/4W
R67	QRV141F-1201	M.F.RESISTOR	1.20K	1/4W
R68	QRV141F-8201	M.F.RESISTOR	8.20K	1/4W
R69	QRV141F-3300	M.F.RESISTOR	330	1/4W
R71	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R72	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R73	QRD161J-681	CARBON RESISTOR	680	1/6W
R74	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R75	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R76	QRV141F-8200	M.F.RESISTOR	820	1/4W
R77	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R78	QRV141F-1001	M.F.RESISTOR	1.00K	1/4W
R79	QRV141F-2202	M.F.RESISTOR	22.0K	1/4W
R80	QRV141F-8200	M.F.RESISTOR	820	1/4W
R81	QRV141F-5601	M.F.RESISTOR	5.60K	1/4W
R82	QRV141F-1001	M.F.RESISTOR	1.00K	1/4W
R83	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R84	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R85	QRV141F-1003	M.F.RESISTOR	100K	1/4W
VR1	QVPB609-102	VR	1.0K	Y DC
VR2	QVPB609-501	VR	500	Y GAIN
VR3	QVPB609-102	VR	1.0K	B DC
VR4	QVPB609-501	VR	500	B GAIN
VR5	QVPB609-102	VR	1.0K	R DC
VR6	QVPB609-501	VR	500	R GAIN
VR7	QVPB609-102	VR	1.0K	SYNC
C1	QCZ0206-104	CER.CAPACITOR	0.10	
C2	QCZ0206-104	CER.CAPACITOR	0.10	
C3	QCZ0206-104	CER.CAPACITOR	0.10	
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QEX41CM-156	E.CAPACITOR	15	16V
C6	QCZ0206-104	CER.CAPACITOR	0.10	
C7	QCZ0206-104	CER.CAPACITOR	0.10	
C8	QCZ0206-104	CER.CAPACITOR	0.10	
C9	QCZ0206-104	CER.CAPACITOR	0.10	
C10	QCZ0206-104	CER.CAPACITOR	0.10	
C11	QEX41CM-156	E.CAPACITOR	15	16V
C12	QCZ0206-104	CER.CAPACITOR	0.10	
C13	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QCZ0206-104	CER.CAPACITOR	0.10	
C15	QEX41CM-156	E.CAPACITOR	15	16V
C16	QCZ0206-104	CER.CAPACITOR	0.10	
C17	QEX41CM-156	E.CAPACITOR	15	16V
C18	QEX41CM-156	E.CAPACITOR	15	16V
C19	QEX41CM-156	E.CAPACITOR	15	16V
C20	QCZ0206-104	CER.CAPACITOR	0.10	
C21	QEX41CM-156	E.CAPACITOR	15	16V
C22	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
C25	QEX41CM-156	E.CAPACITOR	15	16V
C26	QEX41CM-156	E.CAPACITOR	15	16V
C27	QCZ0206-104	CER.CAPACITOR	0.10	
C28	QER41HM-105	E.CAPACITOR	1.0	50V
C29	QEX41CM-156	E.CAPACITOR	15	16V
C30	QCZ0206-104	CER.CAPACITOR	0.10	
C31	QER41HM-105	E.CAPACITOR	1.0	50V

Symbol No.	Part No.	Part Name	Description	
C32	QCT25CH-270	CER.CAPACITOR	27P	50V
C33	QCT25CH-180	CER.CAPACITOR	18P	50V
C34	QCZ0206-104	CER.CAPACITOR	0.10	
C35	QER41CM-476	E.CAPACITOR	47	16V
C36	QCZ0206-104	CER.CAPACITOR	0.10	
C37	QER41CM-476	E.CAPACITOR	47	16V
C38	QCZ0206-104	CER.CAPACITOR	0.10	
C39	QER41CM-476	E.CAPACITOR	47	16V
C40	QCZ0206-104	CER.CAPACITOR	0.10	
C41	QER41CM-476	E.CAPACITOR	47	16V
C42	QEPA1CM-106	E.CAPACITOR	10	16V
C43	QER41CM-476	E.CAPACITOR	47	16V
C45	QER41CM-476	E.CAPACITOR	47	16V
C46	QEX41CM-156	E.CAPACITOR	15	16V
C47	QER41CM-476	E.CAPACITOR	47	16V
C48	QEPA1CM-106	E.CAPACITOR	10	16V
C50	QEX41CM-156	E.CAPACITOR	15	16V
C51	QEX41CM-156	E.CAPACITOR	15	16V
C52	QEPA1CM-106	E.CAPACITOR	10	16V
C54	QEX41CM-156	E.CAPACITOR	15	16V
C55	QEX41CM-156	E.CAPACITOR	15	16V
C56	QER41CM-476	E.CAPACITOR	47	16V
C57	QER41CM-476	E.CAPACITOR	47	16V
C58	QEX41CM-156	E.CAPACITOR	15	16V
C59	QCZ0206-104	CER.CAPACITOR	0.10	
C60	QCZ0206-104	CER.CAPACITOR	0.10	
C61	QCT25CH-680	CER.CAPACITOR	68P	50V
C62	QCT25CH-680	CER.CAPACITOR	68P	50V
C63	QCT25CH-390	CER.CAPACITOR	39P	50V
LC1	SCV2413-001	LPF	6.4MHz	
LC2	SCV2413-001	LPF	6.4MHz	
LC3	SCV2629-001	LPF	13MHz	
S1	SCV1148-008	CONNECTOR	CLK SEL	
S2	SCV1148-008	CONNECTOR	Y GAIN	
S3	SCV2451-001	SWITCH	SET UP	
S4	SCV1148-006	CONNECTOR	B GAIN	
S5	SCV1148-006	CONNECTOR	R GAIN	
S6	SCV1148-008	CONNECTOR	SYNC	
S7	SCV2451-001	SWITCH	N/P	
S8	SCV2419-4103	DIP SW	SYNC POSITION	
CN1	SCV1929-100	CONNECTOR	100PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
JK1	SSV1306-001	BNC CONNECTOR	Y-1	
JK2	SSV1306-001	BNC CONNECTOR	B-Y-1	
JK3	SSV1306-001	BNC CONNECTOR	R-Y-1	
JK4	SSV1306-001	BNC CONNECTOR	Y-2	
JK5	SSV1306-001	BNC CONNECTOR	B-Y-2	
JK6	SSV1306-001	BNC CONNECTOR	R-Y-2	
P1	SCV1149-001	SHORT PLUG		
P2	SCV1149-001	SHORT PLUG		

Symbol No.	Part No.	Part Name	Description
P4	SCV1149–001	SHORT PLUG	
P5	SCV1149–001	SHORT PLUG	
P6	SCV1149–001	SHORT PLUG	

Symbol No.	Part No.	Part Name	Description	
IC1	TD74BC574P	I.C.(M)	TOSHIBA	
IC2	UPD42101C–3	I.C.(M)	NEC	
IC3	MB40778P–G	I.C.(M)	FUJITSU	
IC4	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC5	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC6	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC7	SN74HC74N	I.C.(M)	TEXAS	
IC8	SN74HC245N	I.C.(M)	TEXAS	
IC9	SN74HC245N	I.C.(M)	TEXAS	
IC10	P16V8Q–15–0020	I.C.(M)	AMD	
IC10	SCV1205–020	IC SOCKET	20PIN	
IC11	TD74BC574P	I.C.(M)	TOSHIBA	
IC12	UPD42101C–3	I.C.(M)	NEC	
IC13	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC14	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC15	74AC574PC	I.C.(M)	NATIONAL SEMICO	
IC16	SAA7199BWP	I.C.(M)	PHILIPS	
IC16	SDV0022–084	IC SOCKET	84PIN	
IC17	TC74HC175AP	I.C.(M)	TOSHIBA	
IC18	SN74HC74N	I.C.(M)	TEXAS	
IC19	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC20	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC21	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC22	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC23	TD74BC244P	I.C.(M)	TOSHIBA	
IC23	SCV2530–020	FERRITE BEAD		
IC24	TC74HC04AP	I.C.(M)	TOSHIBA	
IC25	TA78L005AP	I.C.(M)	TOSHIBA	
IC26	TA78L005AP	I.C.(M)	TOSHIBA	
IC27	TA78L005AP	I.C.(M)	TOSHIBA	
IC28	NJM7809FA	I.C.(M)	JRC	
IC29	LT1193CN8	I.C.(M)	LINEAR TECHNOLO	
IC32	NJM79L05A	I.C.(M)	JRC	
IC34	TA78L005AP	I.C.(M)	TOSHIBA	
IC36	TDA8708AT	I.C.(M)	PHILIPS	
IC37	SAA7157T	I.C.(M)	PHILIPS	
Q1	2SC1570NP(F)	TRANSISTOR	SANYO	
R1	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R2	QRD161J–392	CARBON RESISTOR	3.9K	1/6W
R3	QRD161J–332	CARBON RESISTOR	3.3K	1/6W
R4	QRD161J–331	CARBON RESISTOR	330	1/6W
R5	QRD161J–222	CARBON RESISTOR	2.2K	1/6W
R7	QRD161J–104	CARBON RESISTOR	100K	1/6W
R8	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R9	QRD161J–393	CARBON RESISTOR	39K	1/6W
R11	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R13	QRD161J–392	CARBON RESISTOR	3.9K	1/6W
R14	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R15	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R16	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R17	QRD161J–681	CARBON RESISTOR	680	1/6W
R18	QRD161J–101	CARBON RESISTOR	100	1/6W
R19	QRV141F–75R0	M.F.RESISTOR	75.0	1/4W
R20	QRV141F–75R0	M.F.RESISTOR	75.0	1/4W
R47	QRD161J–681	CARBON RESISTOR	680	1/6W
R48	QRD161J–103	CARBON RESISTOR	10K	1/6W
R49	QRD161J–102	CARBON RESISTOR	1.0K	1/6W

Symbol No.	Part No.	Part Name	Description	
R50	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R51	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R52	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R53	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R54	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R55	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R56	QRD161J–102	CARBON RESISTOR	1.0K	1/6W
R300	QRV141F–1101	M.F.RESISTOR	1.10K	1/4W
VR1	QVPB609–501	VR	500	DC
VR4	QVPB609–501	VR	500	GAIN
C1	QCZ0206–104	CER.CAPACITOR	0.10	
C2	QEX41CM–156	E.CAPACITOR	15	16V
C3	QEX41CM–156	E.CAPACITOR	15	16V
C4	QEX41CM–156	E.CAPACITOR	15	16V
C5	QER41CM–476	E.CAPACITOR	47	16V
C6	QER41CM–106	E.CAPACITOR	10	16V
C7	QER41HM–105	E.CAPACITOR	1.0	50V
C8	QCZ0206–104	CER.CAPACITOR	0.10	
C9	QER41CM–476	E.CAPACITOR	47	16V
C10	QEPA1CM–475	E.CAPACITOR	4.7	16V
C11	QEX41CM–156	E.CAPACITOR	15	16V
C12	QEX41CM–156	E.CAPACITOR	15	16V
C13	QFN41HJ–104	MYLAR CAPACITOR	0.10	50V
C14	QFN41HJ–224	MYLAR CAPACITOR	0.22	50V
C15	QCT25CH–270	CER.CAPACITOR	27P	50V
C16	QCT25CH–680	CER.CAPACITOR	68P	50V
C17	QCT25CH–270	CER.CAPACITOR	27P	50V
C18	QCT25CH–120	CER.CAPACITOR	12P	50V
C19	QCT25CH–120	CER.CAPACITOR	12P	50V
C20	QCZ0206–104	CER.CAPACITOR	0.10	
C21	QER41CM–476	E.CAPACITOR	47	16V
C22	QCZ0206–104	CER.CAPACITOR	0.10	
C23	QER41CM–476	E.CAPACITOR	47	16V
C24	QCZ0206–104	CER.CAPACITOR	0.10	
C25	QCZ0206–104	CER.CAPACITOR	0.10	
C26	QCZ0206–104	CER.CAPACITOR	0.10	
C27	QEX41CM–156	E.CAPACITOR	15	16V
C28	QCZ0206–104	CER.CAPACITOR	0.10	
C29	QCZ0206–104	CER.CAPACITOR	0.10	
C30	QCZ0206–104	CER.CAPACITOR	0.10	
C31	QCZ0206–104	CER.CAPACITOR	0.10	
C32	QCZ0206–104	CER.CAPACITOR	0.10	
C33	QCZ0206–104	CER.CAPACITOR	0.10	
C34	QCZ0206–104	CER.CAPACITOR	0.10	
C35	QCZ0206–104	CER.CAPACITOR	0.10	
C36	QCZ0206–104	CER.CAPACITOR	0.10	
C37	QCZ0206–104	CER.CAPACITOR	0.10	
C38	QCZ0206–104	CER.CAPACITOR	0.10	
C39	QCZ0206–104	CER.CAPACITOR	0.10	
C40	QCZ0206–104	CER.CAPACITOR	0.10	
C41	QCZ0206–104	CER.CAPACITOR	0.10	
C42	QCZ0206–104	CER.CAPACITOR	0.10	
C43	QCZ0206–104	CER.CAPACITOR	0.10	
C44	QEX41CM–156	E.CAPACITOR	15	16V
C45	QEX41CM–156	E.CAPACITOR	15	16V
C46	QER41CM–476	E.CAPACITOR	47	16V
C47	QCZ0206–104	CER.CAPACITOR	0.10	

Symbol No.	Part No.	Part Name	Description	
C48	QER41CM–476	E.CAPACITOR	47	16V
C49	QER41CM–476	E.CAPACITOR	47	16V
C50	QER41CM–226	E.CAPACITOR	22	16V
C51	QCT25CH–270	CER.CAPACITOR	27P	50V
C52	QCT25CH–220	CER.CAPACITOR	22P	50V
C53	QFN41HJ–102	MYLAR CAPACITOR	1000P	50V
C54	QEX41CM–156	E.CAPACITOR	15	16V
C55	QEX41CM–156	E.CAPACITOR	15	16V
C56	QCZ0206–104	CER.CAPACITOR	0.10	
C57	QCZ0206–104	CER.CAPACITOR	0.10	
C58	QCZ0206–104	CER.CAPACITOR	0.10	
C59	QER41CM–476	E.CAPACITOR	47	16V
C60	QCZ0206–104	CER.CAPACITOR	0.10	
C61	QER41CM–476	E.CAPACITOR	47	16V
C62	QCZ0206–104	CER.CAPACITOR	0.10	
C63	QER41CM–476	E.CAPACITOR	47	16V
C65	QCZ0206–104	CER.CAPACITOR	0.10	
C66	QER41CM–476	E.CAPACITOR	47	16V
C67	QCZ0206–104	CER.CAPACITOR	0.10	
C68	QER41CM–476	E.CAPACITOR	47	16V
C69	QEPA1CM–106	E.CAPACITOR	10	16V
C70	QER41CM–476	E.CAPACITOR	47	16V
C71	QCZ0206–104	CER.CAPACITOR	0.10	
C72	QCZ0206–104	CER.CAPACITOR	0.10	
C73	QER41CM–476	E.CAPACITOR	47	16V
C74	QEX41CM–156	E.CAPACITOR	15	16V
C75	QEX41CM–156	E.CAPACITOR	15	16V
C92	QER41CM–476	E.CAPACITOR	47	16V
C93	QER41HM–105	E.CAPACITOR	1.0	50V
C94	QER41HM–105	E.CAPACITOR	1.0	50V
C95	QER41CM–476	E.CAPACITOR	47	16V
L1	SCV0331–220	PEAKING COIL	22µH	
L2	SCV0331–220	PEAKING COIL	22µH	
L3	SCV0331–100	PEAKING COIL		
LC1	SCV2411–001	LPF	5MHz	
X1	SCV2414–001	CRYSTAL	24.576MHz	
S1	SCV2419–4103	DIP SW	H POSITION	
S2	SCV2451–001	SWITCH	CLK TIMING	
CN1	SCV1929–100	CONNECTOR	100PIN	
TP1	SQMX001–001	TEST POINT		
JK1	SSV1306–001	BNC CONNECTOR	VBS–1	
JK2	SSV1306–001	BNC CONNECTOR	VBS–2	

5.25 DSO board (optional) assembly list ②⑤
SCK2392-00A

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Symbol No.	Part No.	Part Name	Description	
IC1	TD74BC574P	I.C.(M)	TOSHIBA	
IC2	TD74BC244P	I.C.(M)	TOSHIBA	
IC2	SCV2530-020	FERRITE BEAD		
IC3	NJM4560DD	I.C.(M)	JRC	
IC4	STV1601A	I.C.(M)	THOMSON	
IC5	STV1389AQ	I.C.(M)	THOMSON	
IC6	TD74BC574P	I.C.(M)	TOSHIBA	
Q1	2SC1570NP(F)	TRANSISTOR	SANYO	
R1	QRD161J-562	CARBON RESISTOR	5.6K	1/6W
R2	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R3	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R4	QRD161J-223	CARBON RESISTOR	22K	1/6W
R5	QRD161J-221	CARBON RESISTOR	220	1/6W
R6	QRD161J-221	CARBON RESISTOR	220	1/6W
R7	QRD161J-221	CARBON RESISTOR	220	1/6W
R8	QRD161J-151	CARBON RESISTOR	150	1/6W
R9	QRD161J-151	CARBON RESISTOR	150	1/6W
R10	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R11	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R12	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R13	QRD161J-151	CARBON RESISTOR	150	1/6W
R14	QRD161J-151	CARBON RESISTOR	150	1/6W
R15	QRD161J-101	CARBON RESISTOR	100	1/6W
R17	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R18	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R19	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R20	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R21	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R22	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R23	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R24	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R25	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R26	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
VR1	QVPB609-103	VR	10K	F-ADJ
C1	QER41CM-476	E.CAPACITOR	47	16V
C2	QCZ0206-104	CER.CAPACITOR	0.10	
C3	QER41CM-476	E.CAPACITOR	47	16V
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QCZ0206-104	CER.CAPACITOR	0.10	
C6	QCZ0206-104	CER.CAPACITOR	0.10	
C7	QCZ0206-104	CER.CAPACITOR	0.10	
C8	QER41CM-476	E.CAPACITOR	47	16V
C9	QER41CM-106	E.CAPACITOR	10	16V
C10	QCT25CH-151	CER.CAPACITOR	150P	50V
C11	QEX41CM-156	E.CAPACITOR	15	16V
C12	QCZ0206-104	CER.CAPACITOR	0.10	
C13	QEX41CM-156	E.CAPACITOR	15	16V
C14	QCZ0206-104	CER.CAPACITOR	0.10	
C15	QFN41HJ-104	MYLAR CAPACITOR	0.10	50V
C16	QFN41HJ-104	MYLAR CAPACITOR	0.10	50V
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C18	QEX41CM-156	E.CAPACITOR	15	16V
C19	QCZ0206-104	CER.CAPACITOR	0.10	
C20	QFN41HJ-104	MYLAR CAPACITOR	0.10	50V

Symbol No.	Part No.	Part Name	Description	
C21	QFN41HJ-104	MYLAR CAPACITOR	0.10	50V
C22	QFN41HJ-104	MYLAR CAPACITOR	0.10	50V
C23	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
L1	SCV0331-R22	PEAKING COIL	0.22μH	
S1	SSV2381	SLIDE SWITCH	LOCK/FREE RUN	
CN1	SCV1929-100	CONNECTOR	100PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
TP3	SQMX001-001	TEST POINT		
TP4	SQMX001-001	TEST POINT		
JK1	SSV1306-001	BNC CONNECTOR	SERIAL OUT-1	
JK2	SSV1306-001	BNC CONNECTOR	SERIAL OUT-2	
JK3	SSV1306-001	BNC CONNECTOR	SERIAL OUT-3	

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Symbol No.	Part No.	Part Name	Description	
IC1	JCS0024	I.C.(M)	FUJITSU	
IC2	TC74AC74F	I.C.(M)	TOSHIBA	
IC3	MSM514212-34ZS	I.C.(M)	OKI	
IC4	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC5	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC6	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC7	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC8	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC9	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC10	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC11	TD74BC244FER	I.C.(M)	TOSHIBA	
IC12	TD74BC574F	I.C.(M)	TOSHIBA	
IC13	EPM032-15-0016	I.C.(M)		
IC15	TC74HC00AF	I.C.(M)	TOSHIBA	
IC16	TC74AC74F	I.C.(M)	TOSHIBA	
IC17	TC74AC74F	I.C.(M)	TOSHIBA	
IC19	74AC86SJ	I.C.(M)	NATIONAL SEMICO	
IC24	MC74HC4538AF	I.C.(M)	MOTOROLA	
IC25	TC74HC123AF	I.C.(M)	TOSHIBA	
IC30	MB40568PF-G	I.C.(M)	FUJITSU	
IC31	MB40568PF-G	I.C.(M)	FUJITSU	
IC32	MB40568PF-G	I.C.(M)	FUJITSU	
IC33	LT1228CS8	I.C.(M)	LINEAR TECHNOLO	
IC34	LT1228CS8	I.C.(M)	LINEAR TECHNOLO	
IC35	LT1228CS8	I.C.(M)	LINEAR TECHNOLO	
IC36	VC2100	I.C.(M)	MATSUSHITA	
IC37	TA78L005AP	I.C.(M)	TOSHIBA	
IC38	TA78L005AP	I.C.(M)	TOSHIBA	
IC39	TA78L005AP	I.C.(M)	TOSHIBA	
IC40	NJM79L05A	I.C.(M)	JRC	
IC41	NJM7809FA	I.C.(M)	JRC	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q2	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q3	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q4	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q5	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q6	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q7	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q8	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q9	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q10	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
D1	MA143A	DIODE	MATSUSHITA	
D2	HZM11NB1TR	ZENER DIODE		
D3	MA143A	DIODE	MATSUSHITA	
D4	HZM11NB1TR	ZENER DIODE		
D5	HZM11NB1TR	ZENER DIODE		
D6	HZM11NB1TR	ZENER DIODE		
D7	HZM11NB1TR	ZENER DIODE		
D8	HZM11NB1TR	ZENER DIODE		
R1	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R2	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R3	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R4	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R5	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R6	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R7	NRSA02J-103	M.G.RESISTOR	10K	1/10W

Symbol No.	Part No.	Part Name	Description	
R8	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R9	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R10	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R11	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R12	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R13	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R14	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R15	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R16	NRSA02J-683	M.G.RESISTOR	68K	1/10W
R17	NRSA02J-563	M.G.RESISTOR	56K	1/10W
R18	NRSA02J-823	M.G.RESISTOR	82K	1/10W
R19	NRSA02J-122	M.G.RESISTOR	1.2K	1/10W
R20	NRSA02J-123	M.G.RESISTOR	12K	1/10W
R21	NRSA02J-123	M.G.RESISTOR	12K	1/10W
R22	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R23	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R24	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R25	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R26	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R27	NRSA02J-331	M.G.RESISTOR	330	1/10W
R28	NRSA02J-392	M.G.RESISTOR	3.9K	1/10W
R29	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R30	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R31	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R32	NRSA02J-182	M.G.RESISTOR	1.8K	1/10W
R33	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R34	NRSA02J-273	M.G.RESISTOR	27K	1/10W
R35	NRSA02J-332	M.G.RESISTOR	3.3K	1/10W
R36	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R37	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R38	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R39	NRSA02J-334	M.G.RESISTOR	330K	1/10W
R40	NRSA02J-331	M.G.RESISTOR	330	1/10W
R41	NRSA02J-222	M.G.RESISTOR	2.2K	1/10W
R42	NRSA02J-334	M.G.RESISTOR	330K	1/10W
R43	NRSA02J-392	M.G.RESISTOR	3.9K	1/10W
R44	NRSA02J-331	M.G.RESISTOR	330	1/10W
R45	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R46	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R47	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R48	NRSA02J-332	M.G.RESISTOR	3.3K	1/10W
R49	NRSA02J-272	M.G.RESISTOR	2.7K	1/10W
R50	NRSA02J-331	M.G.RESISTOR	330	1/10W
R51	NRSA02J-222	M.G.RESISTOR	2.2K	1/10W
R52	NRSA02J-334	M.G.RESISTOR	330K	1/10W
R53	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R54	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R55	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R56	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R57	NRSA02J-332	M.G.RESISTOR	3.3K	1/10W
R58	NRSA02J-273	M.G.RESISTOR	27K	1/10W
R59	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R60	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R61	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R62	NRSA02J-331	M.G.RESISTOR	330	1/10W
R63	NRSA02J-392	M.G.RESISTOR	3.9K	1/10W
R64	NRSA02J-332	M.G.RESISTOR	3.3K	1/10W
R65	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R66	NRSA02J-272	M.G.RESISTOR	2.7K	1/10W

Symbol No.	Part No.	Part Name	Description	
R67	NRSA02J-331	M.G.RESISTOR	330	1/10W
R68	NRSA02J-222	M.G.RESISTOR	2.2K	1/10W
R71	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R72	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R73	NRSA02J-332	M.G.RESISTOR	3.3K	1/10W
R74	NRSA02J-273	M.G.RESISTOR	27K	1/10W
R75	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R76	NRSA02J-184	M.G.RESISTOR	180K	1/10W
R79	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R102	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R103	NRVA02D-8202	M.F.RESISTOR	82.0K	1/10W
R104	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R105	NRVA02D-1201	M.F.RESISTOR	1.20K	1/10W
R106	NRVA02D-1800	M.F.RESISTOR	180	1/10W
R107	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R108	NRVA02D-1800	M.F.RESISTOR	180	1/10W
R109	NRVA02D-5600	M.F.RESISTOR	560	1/10W
R110	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R111	NRVA02D-4701	M.F.RESISTOR	4.70K	1/10W
R112	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R113	NRVA02D-3301	M.F.RESISTOR	3.30K	1/10W
R114	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R115	NRVA02D-4701	M.F.RESISTOR	4.70K	1/10W
R116	NRVA02D-8200	M.F.RESISTOR	820	1/10W
R117	NRVA02D-1202	M.F.RESISTOR	12.0K	1/10W
R118	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R120	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R121	NRVA02D-1201	M.F.RESISTOR	1.20K	1/10W
R122	NRVA02D-4700	M.F.RESISTOR	470	1/10W
R123	NRVA02D-4700	M.F.RESISTOR	470	1/10W
R124	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R126	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R127	NRVA02D-1201	M.F.RESISTOR	1.20K	1/10W
R128	NRVA02D-4700	M.F.RESISTOR	470	1/10W
R129	NRVA02D-4700	M.F.RESISTOR	470	1/10W
R130	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R131	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R132	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R133	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R134	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R135	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R136	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R138	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R139	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R140	NRSA02J-101	M.G.RESISTOR	100	1/10W
R141	NRSA02J-101	M.G.RESISTOR	100	1/10W
R142	NRSA02J-101	M.G.RESISTOR	100	1/10W
R143	NRSA02J-101	M.G.RESISTOR	100	1/10W
R144	NRSA02J-101	M.G.RESISTOR	100	1/10W
R145	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R147	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R148	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R149	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R150	NRSA02J-103	M.G.RESISTOR	10K	1/10W
VR1	QVPB609-201	TRIM.RESISTOR	200	Y PED
VR2	QVPB609-101	TRIM.RESISTOR	100	Y GAIN
VR3	QVPB609-501	TRIM.RESISTOR	500	B PED
VR4	QVPB609-101	TRIM.RESISTOR	100	B GAIN

Symbol No.	Part No.	Part Name	Description	
VR5	QVPB609-501	TRIM.RESISTOR	500	R PED
VR6	QVPB609-101	TRIM.RESISTOR	100	R GAIN
C1	QER41CM-476	E.CAPACITOR	47	16V
C2	QER41CM-476	E.CAPACITOR	47	16V
C3	QER41CM-476	E.CAPACITOR	47	16V
C4	NCB21HK-473	CER.CAPACITOR	0.047	50V
C5	QEX41CM-156	E.CAPACITOR	15	16V
C6	QER41HM-105	E.CAPACITOR	1.0	50V
C7	QER41HM-474	E.CAPACITOR	0.47	50V
C8	QER41CM-476	E.CAPACITOR	47	16V
C9	QER41CM-476	E.CAPACITOR	47	16V
C10	QEPA1CM-226	E.CAPACITOR	22	16V
C11	QER41HM-474	E.CAPACITOR	0.47	50V
C12	QER41HM-474	E.CAPACITOR	0.47	50V
C13	QER41HM-474	E.CAPACITOR	0.47	50V
C14	QER41CM-476	E.CAPACITOR	47	16V
C15	QEX41CM-156	E.CAPACITOR	15	16V
C16	QEX41CM-156	E.CAPACITOR	15	16V
C17	QEX41CM-156	E.CAPACITOR	15	16V
C18	QEX41CM-156	E.CAPACITOR	15	16V
C19	QEX41CM-156	E.CAPACITOR	15	16V
C20	QEX41CM-156	E.CAPACITOR	15	16V
C21	QER41CM-476	E.CAPACITOR	47	16V
C22	QEX41CM-156	E.CAPACITOR	15	16V
C23	QEX41CM-156	E.CAPACITOR	15	16V
C24	QEX41CM-156	E.CAPACITOR	15	16V
C25	QEX41CM-156	E.CAPACITOR	15	16V
C26	QEX41CM-156	E.CAPACITOR	15	16V
C27	QEX41CM-156	E.CAPACITOR	15	16V
C28	QER41CM-476	E.CAPACITOR	47	16V
C29	QEX41CM-156	E.CAPACITOR	15	16V
C30	QEX41CM-156	E.CAPACITOR	15	16V
C31	QEX41CM-156	E.CAPACITOR	15	16V
C32	QEX41CM-156	E.CAPACITOR	15	16V
C33	QEX41CM-156	E.CAPACITOR	15	16V
C34	QEX41CM-156	E.CAPACITOR	15	16V
C35	NCB21HK-473	CER.CAPACITOR	0.047	50V
C36	NCB21HK-473	CER.CAPACITOR	0.047	50V
C37	NCB21HK-473	CER.CAPACITOR	0.047	50V
C38	NCB21HK-473	CER.CAPACITOR	0.047	50V
C39	NCB21HK-473	CER.CAPACITOR	0.047	50V
C40	NCB21HK-473	CER.CAPACITOR	0.047	50V
C41	NCB21HK-473	CER.CAPACITOR	0.047	50V
C42	NCB21HK-473	CER.CAPACITOR	0.047	50V
C43	NCB21HK-473	CER.CAPACITOR	0.047	50V
C44	NCB21HK-473	CER.CAPACITOR	0.047	50V
C45	NCB21HK-473	CER.CAPACITOR	0.047	50V
C46	NCB21HK-473	CER.CAPACITOR	0.047	50V
C47	NCB21HK-473	CER.CAPACITOR	0.047	50V
C48	NCT03CH-221	CER.CAPACITOR	220P	50V
C49	NCB21HK-473	CER.CAPACITOR	0.047	50V
C51	NCB21HK-473	CER.CAPACITOR	0.047	50V
C52	QEX41CM-156	E.CAPACITOR	15	16V
C53	NCB21HK-473	CER.CAPACITOR	0.047	50V
C54	NCT03CH-820	CER.CAPACITOR	82P	50V
C55	QFN41HJ-103	MY.CAPACITOR	0.010	50V
C56	NCT03CH-820	CER.CAPACITOR	82P	50V
C58	NCB21HK-473	CER.CAPACITOR	0.047	50V

Symbol No.	Part No.	Part Name	Description	
C59	NCT03CH-4R0	CER.CAPACITOR	4.0P	50V
C60	NCB21HK-562	CER.CAPACITOR	5600P	50V
C61	NCT03CH-680	CER.CAPACITOR	68P	50V
C62	NCB21HK-473	CER.CAPACITOR	0.047	50V
C63	NCT03CH-220	CER.CAPACITOR	22P	50V
C64	NCB21HK-473	CER.CAPACITOR	0.047	50V
C66	NCB21HK-473	CER.CAPACITOR	0.047	50V
C73	NCT03CH-221	CER.CAPACITOR	220P	50V
C74	NCT03CH-270	CER.CAPACITOR	27P	50V
C75	NCT03CH-390	CER.CAPACITOR	39P	50V
C76	NCT03CH-100	CER.CAPACITOR	10P	50V
C77	NCT03CH-221	CER.CAPACITOR	220P	50V
C78	QFN41HJ-104	MY.CAPACITOR	0.10	50V
C79	NCB21HK-473	CER.CAPACITOR	0.047	50V
C80	NCB21HK-473	CER.CAPACITOR	0.047	50V
C81	QFN41HJ-104	MY.CAPACITOR	0.10	50V
C82	NCB21HK-473	CER.CAPACITOR	0.047	50V
C83	QFN41HJ-104	MY.CAPACITOR	0.10	50V
C84	NCT03CH-221	CER.CAPACITOR	220P	50V
C86	NCT03CH-560	CER.CAPACITOR	56P	50V
C89	QEPA1HM-105	E.CAPACITOR	1.0	50V
C91	QER41CM-476	E.CAPACITOR	47	16V
C92	NCB21HK-473	CER.CAPACITOR	0.047	50V
L1	SCV0331-680	PEAKING COIL	$68\mu H$	
L2	SCV0331-101	PEAKING COIL	$100\mu H$	
DL1	SCV2630-001	DELAY LINE		
S1	SCV1148-008	CONNECTOR	CLK SEL	
S2	SCV1148-008	CONNECTOR	Y GAIN	
S3	SCV1148-008	CONNECTOR	Y PED	
S4	SCV1148-006	CONNECTOR	B GAIN	
S5	SCV1148-006	CONNECTOR	R GAIN	
S6	SCV2451-001	SWITCH	N/P	
S7	SCV2419-8103	DIP SW	H PHASE	
CN1	SCV1704-140	CONNECTOR	140PIN	
TP2	SQMX001-001	TEST POINT		
TP4	SQMX001-001	TEST POINT		
TP6	SQMX001-001	TEST POINT		
TP7	SQMX001-001	TEST POINT		
TP8	SQMX001-001	TEST POINT		
TP9	SQMX001-001	TEST POINT		
TP12	SQMX001-001	TEST POINT		
TP13	SQMX001-001	TEST POINT		
TP14	SQMX001-001	TEST POINT		
TP15	SQMX001-001	TEST POINT		
TP16	SQMX001-001	TEST POINT		
FL1	SCV2408-001	LPF		
FL2	SCV2409-001	LPF		
FL3	SCV2409-001	LPF		

Symbol No.	Part No.	Part Name	Description
JK1	SSV1306-001	BNC CONNECTOR	Y
JK2	SSV1306-001	BNC CONNECTOR	B-Y
JK3	SSV1306-001	BNC CONNECTOR	R-Y
P1	SCV1149-001	SHORT PLUG	
P2	SCV1149-001	SHORT PLUG	
P3	SCV1149-001	SHORT PLUG	
P4	SCV1149-001	SHORT PLUG	
P5	SCV1149-001	SHORT PLUG	

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SCK2393-00A
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Symbol No.	Part No.	Part Name	Description		Symbol No.	Part No.	Part Name	Description	
IC1	TDA8708AT	I.C.(M)	PHILIPS		R16	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
IC2	VC2100	I.C.(M)	MATSUSHITA		R17	NRSA02J-122	M.G.RESISTOR	1.2K	1/10W
IC4	SAA7152WP	I.C.(M)	PHILIPS		R18	NRSA02J-823	M.G.RESISTOR	82K	1/10W
IC4	SDV0022-044	IC SOCKET	44PIN		R19	NRSA02J-123	M.G.RESISTOR	12K	1/10W
IC5	SAA7151BWP	I.C.(M)	PHILIPS		R20	NRSA02J-123	M.G.RESISTOR	12K	1/10W
IC5	SDV0022-068	IC SOCKET	68PIN		R21	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
IC6	74AC377SJL	I.C.(M)	NATIONAL SEMICO		R22	NRSA02J-223	M.G.RESISTOR	22K	1/10W
IC7	74AC377SJL	I.C.(M)	NATIONAL SEMICO		R23	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
IC9	74AC377SJL	I.C.(M)	NATIONAL SEMICO		R28	NRSA02J-682	M.G.RESISTOR	6.8K	1/10W
IC10	74AC377SJL	I.C.(M)	NATIONAL SEMICO						
					R29	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC12	74AC377SJL	I.C.(M)	NATIONAL SEMICO		R30	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC14	TC74HC245AF	I.C.(M)	TOSHIBA		R31	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC15	TC74HC245AF	I.C.(M)	TOSHIBA		R32	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC16	P16V8Q-15-0040	I.C.(M)	AMD		R33	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC16	SCV1205-020	IC SOCKET	20PIN		R34	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC17	SAA7157T	I.C.(M)	PHILIPS		R35	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC18	TC74AC74F	I.C.(M)	TOSHIBA		R36	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC19	74AC175SJ	I.C.(M)	NATIONAL SEMICO		R37	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC20	TC74HC00AF	I.C.(M)	TOSHIBA		R38	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC21	TC74AC74F	I.C.(M)	TOSHIBA						
					R39	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC22	TC74HC00AF	I.C.(M)	TOSHIBA		R40	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC23	TC74AC161FTP1	I.C.(M)	TOSHIBA		R41	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC25	TD74BC244FER	I.C.(M)	TOSHIBA		R42	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC26	EPM032-15-0016	I.C.(M)	ALTERA CORPORAT		R43	NRSA02J-101	M.G.RESISTOR	100	1/10W
IC26	SDV0022-044	IC SOCKET	44PIN		R44	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC27	TC74AC74F	I.C.(M)	TOSHIBA		R45	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC28	JCS0024	I.C.(M)	FUJITSU		R46	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC29	MSM514212-34ZS	I.C.(M)	OKI		R47	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC30	TD74BC574F	I.C.(M)	TOSHIBA		R48	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC31	SN74ABT574NSEL	I.C.(M)	TEXAS						
					R49	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC32	SN74ABT574NSEL	I.C.(M)	TEXAS		R50	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC33	SN74ABT574NSEL	I.C.(M)	TEXAS		R51	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC34	SN74ABT574NSEL	I.C.(M)	TEXAS		R52	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC35	SN74ABT574NSEL	I.C.(M)	TEXAS		R53	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC36	SN74ABT574NSEL	I.C.(M)	TEXAS		R54	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC37	SN74ABT574NSEL	I.C.(M)	TEXAS		R55	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC39	TA78L005AP	I.C.(M)	TOSHIBA		R56	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC40	TA78L005AP	I.C.(M)	TOSHIBA		R57	NRSA02J-103	M.G.RESISTOR	10K	1/10W
IC100	NJM7809FA	I.C.(M)	JRC		R58	NRSA02J-103	M.G.RESISTOR	10K	1/10W
					R59	NRSA02J-103	M.G.RESISTOR	10K	1/10W
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA		R60	NRSA02J-103	M.G.RESISTOR	10K	1/10W
Q3	2SA1532(BC)	TRANSISTOR	MATSUSHITA		R61	NRSA02J-103	M.G.RESISTOR	10K	1/10W
Q4	2SA1532(BC)	TRANSISTOR	MATSUSHITA		R62	NRSA02J-103	M.G.RESISTOR	10K	1/10W
					R64	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
					R65	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
D1	MA143A	DIODE	MATSUSHITA		R66	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
D2	M1MA152A	DIODE	MOTOROLA		R67	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
					R68	NRSA02J-103	M.G.RESISTOR	10K	1/10W
					R69	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R1	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W					
R2	NRSA02J-223	M.G.RESISTOR	22K	1/10W	R70	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R3	NRSA02J-223	M.G.RESISTOR	22K	1/10W	R71	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R4	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W	R72	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R9	NRSA02J-331	M.G.RESISTOR	330	1/10W	R73	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R10	NRSA02J-681	M.G.RESISTOR	680	1/10W	R74	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R11	NRSA02J-222	M.G.RESISTOR	2.2K	1/10W	R75	NRSA02J-101	M.G.RESISTOR	100	1/10W
R12	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W	R76	NRSA02J-101	M.G.RESISTOR	100	1/10W
R13	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W	R77	NRSA02J-101	M.G.RESISTOR	100	1/10W
R14	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W	R78	NRSA02J-101	M.G.RESISTOR	100	1/10W
					R79	NRSA02J-101	M.G.RESISTOR	100	1/10W
R15	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W					

Symbol No.	Part No.	Part Name	Description	
R80	NRSA02J-101	M.G.RESISTOR	100	1/10W
R81	NRSA02J-101	M.G.RESISTOR	100	1/10W
R82	NRSA02J-101	M.G.RESISTOR	100	1/10W
R83	NRSA02J-101	M.G.RESISTOR	100	1/10W
R84	NRSA02J-101	M.G.RESISTOR	100	1/10W
R85	NRSA02J-222	M.G.RESISTOR	2.2K	1/10W
R86	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R87	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R105	NRSA02J-272	M.G.RESISTOR	2.7K	1/10W
R106	NRSA02J-153	M.G.RESISTOR	15K	1/10W
VR2	QVPB609-502	TRIM RESISTOR	5.0K	AGC
C1	QER41CM-476	E.CAPACITOR	47	16V
C2	QEPA1CM-475	E.CAPACITOR	4.7	16V
C3	QER41CM-476	E.CAPACITOR	47	16V
C4	NCB21HK-473	CER.CAPACITOR	0.047	50V
C5	QEX41CM-156	E.CAPACITOR	15	16V
C6	QEX41CM-156	E.CAPACITOR	15	16V
C7	QER41HM-105	E.CAPACITOR	1.0	50V
C8	QER41HM-105	E.CAPACITOR	1.0	50V
C9	QFN41HJ-104	MYLAR CAPACITOR	0.10	50V
C10	QER41CM-476	E.CAPACITOR	47	16V
C11	QER41HM-105	E.CAPACITOR	1.0	50V
C21	NCB21HK-473	CER.CAPACITOR	0.047	50V
C22	NCB21HK-473	CER.CAPACITOR	0.047	50V
C23	NCB21HK-473	CER.CAPACITOR	0.047	50V
C24	QER41CM-476	E.CAPACITOR	47	16V
C25	NCB21HK-473	CER.CAPACITOR	0.047	50V
C26	NCT03CH-100	CER.CAPACITOR	10P	50V
C27	NCT03CH-390	CER.CAPACITOR	39P	50V
C28	NCT03CH-221	CER.CAPACITOR	220P	50V
C29	QER41CM-476	E.CAPACITOR	47	16V
C30	NCT03CH-270	CER.CAPACITOR	27P	50V
C31	NCT03CH-221	CER.CAPACITOR	220P	50V
C32	QER41HM-474	E.CAPACITOR	0.47	50V
C33	QER41HM-105	E.CAPACITOR	1.0	50V
C34	NCT03CH-221	CER.CAPACITOR	220P	50V
C35	NCT03CH-221	CER.CAPACITOR	220P	50V
C36	QER41HM-474	E.CAPACITOR	0.47	50V
C37	QER41HM-474	E.CAPACITOR	0.47	50V
C38	QER41HM-474	E.CAPACITOR	0.47	50V
C39	QEPA1HM-105	E.CAPACITOR	1.0	50V
C40	QFN41HJ-103	MYLAR CAPACITOR	0.010	50V
C41	NCB21HK-473	CER.CAPACITOR	0.047	50V
C42	NCB21HK-473	CER.CAPACITOR	0.047	50V
C44	QEX41CM-156	E.CAPACITOR	15	16V
C45	QEX41CM-156	E.CAPACITOR	15	16V
C46	NCB21HK-473	CER.CAPACITOR	0.047	50V
C47	NCB21HK-473	CER.CAPACITOR	0.047	50V
C49	NCT03CH-180	CER.CAPACITOR	18P	50V
C50	NCT03CH-180	CER.CAPACITOR	18P	50V
C51	QFN41HJ-102	MYLAR CAPACITOR	1000P	50V
C52	NCB21HK-473	CER.CAPACITOR	0.047	50V
C54	QEX41CM-156	E.CAPACITOR	15	16V
C55	QEX41CM-156	E.CAPACITOR	15	16V
C60	NCF21EZ-104	CER.CAPACITOR	0.10	25V
C62	NCB21HK-473	CER.CAPACITOR	0.047	50V
C64	NCB21HK-473	CER.CAPACITOR	0.047	50V

Symbol No.	Part No.	Part Name	Description	
C65	NCB21HK-473	CER.CAPACITOR	0.047	50V
C66	NCB21HK-473	CER.CAPACITOR	0.047	50V
C67	NCB21HK-473	CER.CAPACITOR	0.047	50V
C68	QEX41CM-156	E.CAPACITOR	15	16V
C69	QEX41CM-156	E.CAPACITOR	15	16V
C70	NCB21HK-473	CER.CAPACITOR	0.047	50V
C71	QEX41CM-156	E.CAPACITOR	15	16V
C72	QEX41CM-156	E.CAPACITOR	15	16V
C73	NCB21HK-473	CER.CAPACITOR	0.047	50V
C74	NCB21HK-473	CER.CAPACITOR	0.047	50V
C75	NCB21HK-473	CER.CAPACITOR	0.047	50V
C76	QER41CM-476	E.CAPACITOR	47	16V
C77	NCB21HK-473	CER.CAPACITOR	0.047	50V
C78	QER41CM-476	E.CAPACITOR	47	16V
C79	NCB21HK-473	CER.CAPACITOR	0.047	50V
C80	QER41CM-476	E.CAPACITOR	47	16V
C81	NCB21HK-473	CER.CAPACITOR	0.047	50V
C82	NCB21HK-473	CER.CAPACITOR	0.047	50V
C83	NCB21HK-473	CER.CAPACITOR	0.047	50V
C84	NCB21HK-473	CER.CAPACITOR	0.047	50V
C85	NCB21HK-473	CER.CAPACITOR	0.047	50V
C86	NCB21HK-473	CER.CAPACITOR	0.047	50V
C87	NCB21HK-473	CER.CAPACITOR	0.047	50V
C88	QEPA1CM-475	E.CAPACITOR	4.7	16V
C89	NCB21HK-473	CER.CAPACITOR	0.047	50V
C90	NCB21HK-473	CER.CAPACITOR	0.047	50V
C91	QEX41CM-156	E.CAPACITOR	15	16V
L1	SCV0331-680	PEAKING COIL	68μH	
L2	SCV0331-100	PEAKING COIL	10μH	
L3	SCV0331-101	PEAKING COIL	100μH	
LC1	SCV2411-001	LPF	5MHz	
X1	SCV2414-001	CRYSTAL	24.576MHz	
S1	SCV1148-008	CONNECTOR	PIX SEL	
S2	SCV2451-001	SWITCH	N/P	
S5	SCV2419-8103	DIP SW	H POSITION	
CN1	SCV1704-140	CONNECTOR	140PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
TP3	SQMX001-001	TEST POINT		
TP4	SQMX001-001	TEST POINT		
JK1	SSV1306-001	BNC CONNECTOR		
P1	SCV1149-001	SHORT PLUG		

5.28 DSI board (optional) assembly list ②⑧
SCK2390-S0A

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Symbol No.	Part No.	Part Name	Description	
IC4	STV1602A	I.C.(M)	THOMSON	
IC6	MC10125L	I.C.(M)	MOTOROLA	
IC6	SCV2529-016	FERRITE BEAD	16PIN	
IC7	MC10125L	I.C.(M)	MOTOROLA	
IC7	SCV2529-016	FERRITE BEAD	16PIN	
IC8	MC10125L	I.C.(M)	MOTOROLA	
IC8	SCV2529-016	FERRITE BEAD	16PIN	
IC9	74AC574PC	I.C.(M)	NATIONAL SEMICO	
IC10	P16V8Q-15-0019	I.C.(M)	AMD	
IC10	SCV1205-020	IC SOCKET	20PIN	
IC11	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC12	74AC175PC	I.C.(M)	NATIONAL SEMICO	
IC13	74AC86PC	I.C.(M)	NATIONAL SEMICO	
IC14	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC15	74AC175PC	I.C.(M)	NATIONAL SEMICO	
IC16	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC17	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC18	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC19	TC74AC164P	I.C.(M)	TOSHIBA	
IC20	TC74AC164P	I.C.(M)	TOSHIBA	
IC21	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC22	74AC00PC	I.C.(M)	NATIONAL SEMICO	
IC23	SCV2530-020	FERRITE BEAD		
IC23	TD74BC244P	I.C.(M)	TOSHIBA	
IC24	MSM514212-34ZS	I.C.(M)	OKI	
IC25	TD74BC574P	I.C.(M)	TOSHIBA	
IC26	SN74ABT574N	I.C.(M)	TEXAS	
IC27	SN74ABT574N	I.C.(M)	TEXAS	
IC28	SN74ABT574N	I.C.(M)	TEXAS	
IC29	SN74ABT574N	I.C.(M)	TEXAS	
IC30	SN74ABT574N	I.C.(M)	TEXAS	
IC31	SN74ABT574N	I.C.(M)	TEXAS	
IC32	SN74ABT574N	I.C.(M)	TEXAS	
Q1	2SC1570NP(F)	TRANSISTOR	SANYO	
D1	MA165	DIODE	MATSUSHITA	
R37	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R38	QRD161J-473	CARBON RESISTOR	47K	1/6W
R39	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R40	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R41	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R42	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R43	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R44	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R45	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R46	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R47	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R48	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R49	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R50	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R51	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R52	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R53	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R54	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R55	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R56	QRD161J-0R0	CARBON RESISTOR	0	1/6W

Symbol No.	Part No.	Part Name	Description	
R57	QRD161J-0R0	CARBON RESISTOR	0	1/6W
R58	QRD161J-103	CARBON RESISTOR	10K	1/6W
R59	QRD161J-103	CARBON RESISTOR	10K	1/6W
R61	QRD161J-103	CARBON RESISTOR	10K	1/6W
R62	QRD161J-103	CARBON RESISTOR	10K	1/6W
R63	QRD161J-103	CARBON RESISTOR	10K	1/6W
R64	QRD161J-103	CARBON RESISTOR	10K	1/6W
R65	QRD161J-103	CARBON RESISTOR	10K	1/6W
R66	QRD161J-103	CARBON RESISTOR	10K	1/6W
R67	QRD161J-103	CARBON RESISTOR	10K	1/6W
R68	QRD161J-103	CARBON RESISTOR	10K	1/6W
R69	QRD161J-103	CARBON RESISTOR	10K	1/6W
R70	QRD161J-103	CARBON RESISTOR	10K	1/6W
R71	QRD161J-103	CARBON RESISTOR	10K	1/6W
R72	QRD161J-103	CARBON RESISTOR	10K	1/6W
R73	QRD161J-103	CARBON RESISTOR	10K	1/6W
R74	QRD161J-103	CARBON RESISTOR	10K	1/6W
R75	QRD161J-101	CARBON RESISTOR	100	1/6W
R76	QRD161J-101	CARBON RESISTOR	100	1/6W
R77	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R78	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R79	QRD161J-103	CARBON RESISTOR	10K	1/6W
R80	QRD161J-103	CARBON RESISTOR	10K	1/6W
R81	QRD161J-103	CARBON RESISTOR	10K	1/6W
R82	QRD161J-103	CARBON RESISTOR	10K	1/6W
R83	QRD161J-103	CARBON RESISTOR	10K	1/6W
R84	QRD161J-103	CARBON RESISTOR	10K	1/6W
R85	QRD161J-103	CARBON RESISTOR	10K	1/6W
R86	QRD161J-101	CARBON RESISTOR	100	1/6W
R87	QRD161J-101	CARBON RESISTOR	100	1/6W
R88	QRD161J-101	CARBON RESISTOR	100	1/6W
R89	QRD161J-101	CARBON RESISTOR	100	1/6W
R90	QRD161J-101	CARBON RESISTOR	100	1/6W
R91	QRD161J-101	CARBON RESISTOR	100	1/6W
R92	QRD161J-101	CARBON RESISTOR	100	1/6W
R93	QRD161J-101	CARBON RESISTOR	100	1/6W
R94	QRD161J-101	CARBON RESISTOR	100	1/6W
R95	QRD161J-101	CARBON RESISTOR	100	1/6W
VR1	QVPB609-103	VR	10K	F-ADJ
C1	QER41CM-476	E.CAPACITOR	47	16V
C2	QER41CM-476	E.CAPACITOR	47	16V
C3	QCZ0206-104	CER.CAPACITOR	0.10	
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QCT25CH-470	CER.CAPACITOR	47P	50V
C6	QCT25CH-470	CER.CAPACITOR	47P	50V
C7	QER41CM-476	E.CAPACITOR	47	16V
C8	QEX41CM-156	E.CAPACITOR	15	16V
C9	QCZ0206-104	CER.CAPACITOR	0.10	
C10	QEX41CM-156	E.CAPACITOR	15	16V
C11	QER41CM-106	E.CAPACITOR	10	16V
C12	QER41HM-105	E.CAPACITOR	1.0	50V
C13	QFN41HJ-223	MYLAR CAPACITOR	0.022	50V
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C18	QCZ0206-104	CER.CAPACITOR	0.10	
C19	QCZ0206-104	CER.CAPACITOR	0.10	
C20	QCZ0206-104	CER.CAPACITOR	0.10	
C21	QCZ0206-104	CER.CAPACITOR	0.10	

Symbol No.	Part No.	Part Name	Description	
C22	QCZ0206-104	CER.CAPACITOR	0.10	
C23	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
C25	QCZ0206-104	CER.CAPACITOR	0.10	
C26	QCZ0206-104	CER.CAPACITOR	0.10	
C27	QCZ0206-104	CER.CAPACITOR	0.10	
C28	QCZ0206-104	CER.CAPACITOR	0.10	
C29	QCZ0206-104	CER.CAPACITOR	0.10	
C30	QCZ0206-104	CER.CAPACITOR	0.10	
C31	QCZ0206-104	CER.CAPACITOR	0.10	
C32	QCZ0206-104	CER.CAPACITOR	0.10	
C33	QCZ0206-104	CER.CAPACITOR	0.10	
C34	QCZ0206-104	CER.CAPACITOR	0.10	
C35	QCZ0206-104	CER.CAPACITOR	0.10	
C36	QCZ0206-104	CER.CAPACITOR	0.10	
C37	QCZ0206-104	CER.CAPACITOR	0.10	
C38	QEX41CM-156	E.CAPACITOR	15	16V
C39	QCZ0206-104	CER.CAPACITOR	0.10	
C40	QCZ0206-104	CER.CAPACITOR	0.10	
C41	QCZ0206-104	CER.CAPACITOR	0.10	
C42	QCZ0206-104	CER.CAPACITOR	0.10	
C43	QCZ0206-104	CER.CAPACITOR	0.10	
C44	QCZ0206-104	CER.CAPACITOR	0.10	
C45	QCZ0206-104	CER.CAPACITOR	0.10	
C46	QCZ0206-104	CER.CAPACITOR	0.10	
C47	QCZ0206-104	CER.CAPACITOR	0.10	
S1	SCV1682-001	ROTARY SWICH	DATA TIMING	
S2	SCV2451-001	SWITCH	LOCK / FREE RUN	
CN2	SCV1704-140	CONNECTOR	140PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
TP3	SQMX001-001	TEST POINT		
TP4	SQMX001-001	TEST POINT		
TP5	SQMX001-001	TEST POINT		
TP6	SQMX001-001	TEST POINT		
TP7	SQMX001-001	TEST POINT		
TP8	SQMX001-001	TEST POINT		
TP9	SQMX001-001	TEST POINT		
JK1	SSV1306-001	BNC CONNECTOR	SERIAL IN	
K1	BL02RN2-R62	FERRITE BEADS		
K2	BL02RN2-R62	FERRITE BEADS		

Symbol No.	Part No.	Part Name	Description	
IC1	MC10116L	I.C.(M)	MOTOROLA	
IC2	MC10116L	I.C.(M)	MOTOROLA	
IC3	MC10116L	I.C.(M)	MOTOROLA	
IC6	MC10125L	I.C.(M)	MOTOROLA	
IC7	MC10125L	I.C.(M)	MOTOROLA	
IC8	MC10125L	I.C.(M)	MOTOROLA	
IC9	74AC574PC	I.C.(M)	NATIONAL SEMICO	
IC10	P16V8Q-15-0019	I.C.(M)	AMD	
IC10	SCV1205-020	IC SOCKET	20PIN	
IC11	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC12	74AC175PC	I.C.(M)	NATIONAL SEMICO	
IC13	74AC86PC	I.C.(M)	NATIONAL SEMICO	
IC14	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC15	74AC175PC	I.C.(M)	NATIONAL SEMICO	
IC16	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC17	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC18	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC19	TC74AC164P	I.C.(M)	TOSHIBA	
IC20	TC74AC164P	I.C.(M)	TOSHIBA	
IC21	74AC74PC	I.C.(M)	NATIONAL SEMI	
IC22	74AC00PC	I.C.(M)	NATIONAL SEMICO	
IC23	SCV2530-020	FERRITE BEAD		
IC23	TD74BC244P	I.C.(M)	TOSHIBA	
IC24	MSM514212-34ZS	I.C.(M)	OKI	
IC25	TD74BC574P	I.C.(M)	TOSHIBA	
IC26	SN74ABT574N	I.C.(M)	TEXAS	
IC27	SN74ABT574N	I.C.(M)	TEXAS	
IC28	SN74ABT574N	I.C.(M)	TEXAS	
IC29	SN74ABT574N	I.C.(M)	TEXAS	
IC30	SN74ABT574N	I.C.(M)	TEXAS	
IC31	SN74ABT574N	I.C.(M)	TEXAS	
IC32	SN74ABT574N	I.C.(M)	TEXAS	
D1	MA165	DIODE	MATSUSHITA	
R1	QRD161J-221	CARBON RESISTOR	220	1/6W
R2	QRD161J-221	CARBON RESISTOR	220	1/6W
R3	QRD161J-221	CARBON RESISTOR	220	1/6W
R4	QRD161J-221	CARBON RESISTOR	220	1/6W
R5	QRD161J-221	CARBON RESISTOR	220	1/6W
R6	QRD161J-221	CARBON RESISTOR	220	1/6W
R7	QRD161J-221	CARBON RESISTOR	220	1/6W
R8	QRD161J-221	CARBON RESISTOR	220	1/6W
R9	QRD161J-221	CARBON RESISTOR	220	1/6W
R10	QRD161J-221	CARBON RESISTOR	220	1/6W
R11	QRD161J-221	CARBON RESISTOR	220	1/6W
R12	QRD161J-221	CARBON RESISTOR	220	1/6W
R13	QRD161J-221	CARBON RESISTOR	220	1/6W
R14	QRD161J-221	CARBON RESISTOR	220	1/6W
R15	QRD161J-221	CARBON RESISTOR	220	1/6W
R16	QRD161J-221	CARBON RESISTOR	220	1/6W
R17	QRD161J-221	CARBON RESISTOR	220	1/6W
R18	QRD161J-221	CARBON RESISTOR	220	1/6W
R19	QRD161J-471	CARBON RESISTOR	470	1/6W
R20	QRD161J-471	CARBON RESISTOR	470	1/6W
R21	QRD161J-471	CARBON RESISTOR	470	1/6W
R22	QRD161J-471	CARBON RESISTOR	470	1/6W
R23	QRD161J-471	CARBON RESISTOR	470	1/6W

Symbol No.	Part No.	Part Name	Description	
R24	QRD161J-471	CARBON RESISTOR	470	1/6W
R25	QRD161J-471	CARBON RESISTOR	470	1/6W
R26	QRD161J-471	CARBON RESISTOR	470	1/6W
R27	QRD161J-471	CARBON RESISTOR	470	1/6W
R28	QRD161J-471	CARBON RESISTOR	470	1/6W
R29	QRD161J-471	CARBON RESISTOR	470	1/6W
R30	QRD161J-471	CARBON RESISTOR	470	1/6W
R31	QRD161J-471	CARBON RESISTOR	470	1/6W
R32	QRD161J-471	CARBON RESISTOR	470	1/6W
R33	QRD161J-471	CARBON RESISTOR	470	1/6W
R34	QRD161J-471	CARBON RESISTOR	470	1/6W
R35	QRD161J-471	CARBON RESISTOR	470	1/6W
R36	QRD161J-471	CARBON RESISTOR	470	1/6W
R61	QRD161J-103	CARBON RESISTOR	10K	1/6W
R62	QRD161J-103	CARBON RESISTOR	10K	1/6W
R63	QRD161J-103	CARBON RESISTOR	10K	1/6W
R64	QRD161J-103	CARBON RESISTOR	10K	1/6W
R65	QRD161J-103	CARBON RESISTOR	10K	1/6W
R66	QRD161J-103	CARBON RESISTOR	10K	1/6W
R67	QRD161J-103	CARBON RESISTOR	10K	1/6W
R68	QRD161J-103	CARBON RESISTOR	10K	1/6W
R69	QRD161J-103	CARBON RESISTOR	10K	1/6W
R70	QRD161J-103	CARBON RESISTOR	10K	1/6W
R71	QRD161J-103	CARBON RESISTOR	10K	1/6W
R72	QRD161J-103	CARBON RESISTOR	10K	1/6W
R73	QRD161J-103	CARBON RESISTOR	10K	1/6W
R74	QRD161J-103	CARBON RESISTOR	10K	1/6W
R76	QRD161J-101	CARBON RESISTOR	100	1/6W
R77	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R78	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R79	QRD161J-103	CARBON RESISTOR	10K	1/6W
R80	QRD161J-103	CARBON RESISTOR	10K	1/6W
R81	QRD161J-103	CARBON RESISTOR	10K	1/6W
R82	QRD161J-103	CARBON RESISTOR	10K	1/6W
R83	QRD161J-103	CARBON RESISTOR	10K	1/6W
R84	QRD161J-103	CARBON RESISTOR	10K	1/6W
R85	QRD161J-103	CARBON RESISTOR	10K	1/6W
R95	QRD161J-101	CARBON RESISTOR	100	1/6W
C1	QER41CM-476	E.CAPACITOR	47	16V
C2	QER41CM-476	E.CAPACITOR	47	16V
C3	QCZ0206-104	CER.CAPACITOR	0.10	
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C13	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QCZ0206-104	CER.CAPACITOR	0.10	
C15	QCZ0206-104	CER.CAPACITOR	0.10	
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C18	QCZ0206-104	CER.CAPACITOR	0.10	
C19	QCZ0206-104	CER.CAPACITOR	0.10	
C20	QCZ0206-104	CER.CAPACITOR	0.10	
C21	QCZ0206-104	CER.CAPACITOR	0.10	
C22	QCZ0206-104	CER.CAPACITOR	0.10	
C23	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
C25	QCZ0206-104	CER.CAPACITOR	0.10	
C26	QCZ0206-104	CER.CAPACITOR	0.10	
C27	QCZ0206-104	CER.CAPACITOR	0.10	
C28	QCZ0206-104	CER.CAPACITOR	0.10	
C29	QCZ0206-104	CER.CAPACITOR	0.10	

Symbol No.	Part No.	Part Name	Description
C30	QCZ0206-104	CER.CAPACITOR	0.10
C31	QCZ0206-104	CER.CAPACITOR	0.10
C32	QCZ0206-104	CER.CAPACITOR	0.10
C33	QCZ0206-104	CER.CAPACITOR	0.10
C34	QCZ0206-104	CER.CAPACITOR	0.10
C35	QCZ0206-104	CER.CAPACITOR	0.10
C36	QCZ0206-104	CER.CAPACITOR	0.10
C37	QCZ0206-104	CER.CAPACITOR	0.10
C38	QEX41CM-156	E.CAPACITOR	15 16V
C39	QCZ0206-104	CER.CAPACITOR	0.10
C40	QCZ0206-104	CER.CAPACITOR	0.10
C41	QCZ0206-104	CER.CAPACITOR	0.10
C42	QCZ0206-104	CER.CAPACITOR	0.10
C43	QCZ0206-104	CER.CAPACITOR	0.10
C44	QCZ0206-104	CER.CAPACITOR	0.10
C45	QCZ0206-104	CER.CAPACITOR	0.10
C46	QCZ0206-104	CER.CAPACITOR	0.10
S1	SCV1682-001	ROTARY SWICH	DATA OUT TIMING
CN1	SCV2441-S25	DSUB CONNECTOR	D-SUB 25 PIN
CN2	SCV1704-140	CONNECTOR	140PIN
TP1	SQMX001-001	TEST POINT	
TP2	SQMX001-001	TEST POINT	
TP3	SQMX001-001	TEST POINT	
TP6	SQMX001-001	TEST POINT	
TP7	SQMX001-001	TEST POINT	
TP8	SQMX001-001	TEST POINT	
TP9	SQMX001-001	TEST POINT	
K1	BL02RN2-R62	FERRITE BEADS	
K2	BL02RN2-R62	FERRITE BEADS	

5.30 AKI board (optional) assembly list ③⓪
SCK2388-K0A

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Symbol No.	Part No.	Part Name	Description	
IC1	JCS0024	I.C.(M)	FUJITSU	
IC2	TC74AC74F	I.C.(M)	TOSHIBA	
IC3	MSM514212-34ZS	I.C.(M)	OKI	
IC5	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC7	SN74ABT574NSEL	I.C.(M)	TEXAS	
IC11	TD74BC244FER	I.C.(M)	TOSHIBA	
IC12	TD74BC574F	I.C.(M)	TOSHIBA	
IC13	EPM032-15-0016	I.C.(M)		
IC15	TC74HC00AF	I.C.(M)	TOSHIBA	
IC16	TC74AC74F	I.C.(M)	TOSHIBA	
IC17	TC74AC74F	I.C.(M)	TOSHIBA	
IC19	74AC86SJ	I.C.(M)	NATIONAL SEMICO	
IC24	MC74HC4538AF	I.C.(M)	MOTOROLA	
IC25	TC74HC123AF	I.C.(M)	TOSHIBA	
IC30	MB40568PF-G	I.C.(M)	FUJITSU	
IC33	LT1228CS8	I.C.(M)	LINEAR TECHNOLO	
IC36	VC2100	I.C.(M)	MATSUSHITA	
IC37	TA78L005AP	I.C.(M)	TOSHIBA	
IC40	NJM79L05A	I.C.(M)	JRC	
IC41	NJM7809FA	I.C.(M)	JRC	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q2	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q7	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q10	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
D1	MA143A	DIODE	MATSUSHITA	
D2	HZM11NB1TR	ZENER DIODE		
D3	MA143A	DIODE	MATSUSHITA	
D4	HZM11NB1TR	ZENER DIODE		
D5	HZM11NB1TR	ZENER DIODE		
D6	HZM11NB1TR	ZENER DIODE		
R1	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R3	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R4	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R5	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R15	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R16	NRSA02J-683	M.G.RESISTOR	68K	1/10W
R17	NRSA02J-563	M.G.RESISTOR	56K	1/10W
R18	NRSA02J-823	M.G.RESISTOR	82K	1/10W
R19	NRSA02J-122	M.G.RESISTOR	1.2K	1/10W
R20	NRSA02J-123	M.G.RESISTOR	12K	1/10W
R21	NRSA02J-123	M.G.RESISTOR	12K	1/10W
R22	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R23	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R24	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R25	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R26	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R27	NRSA02J-331	M.G.RESISTOR	330	1/10W
R28	NRSA02J-392	M.G.RESISTOR	3.9K	1/10W
R29	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R30	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R31	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R32	NRSA02J-182	M.G.RESISTOR	1.8K	1/10W
R33	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R34	NRSA02J-273	M.G.RESISTOR	27K	1/10W
R35	NRSA02J-332	M.G.RESISTOR	3.3K	1/10W
R36	NRSA02J-103	M.G.RESISTOR	10K	1/10W

Symbol No.	Part No.	Part Name	Description	
R37	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R38	NRSA02J-223	M.G.RESISTOR	22K	1/10W
R39	NRSA02J-334	M.G.RESISTOR	330K	1/10W
R40	NRSA02J-331	M.G.RESISTOR	330	1/10W
R41	NRSA02J-222	M.G.RESISTOR	2.2K	1/10W
R47	NRVA02D-75R0	M.F.RESISTOR	75.0	1/10W
R56	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R75	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R76	NRSA02J-184	M.G.RESISTOR	180K	1/10W
R79	NRSA02J-472	M.G.RESISTOR	4.7K	1/10W
R86	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R87	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R88	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R89	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R90	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R91	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R92	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R93	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R94	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R95	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R96	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R97	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R98	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R99	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R100	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R101	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
R102	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R103	NRVA02D-8202	M.F.RESISTOR	82.0K	1/10W
R104	NRVA02D-1500	M.F.RESISTOR	150	1/10W
R105	NRVA02D-1201	M.F.RESISTOR	1.20K	1/10W
R106	NRVA02D-1800	M.F.RESISTOR	180	1/10W
R107	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R108	NRVA02D-1800	M.F.RESISTOR	180	1/10W
R109	NRVA02D-5600	M.F.RESISTOR	560	1/10W
R110	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R111	NRVA02D-4701	M.F.RESISTOR	4.70K	1/10W
R112	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R113	NRVA02D-3301	M.F.RESISTOR	3.30K	1/10W
R114	NRVA02D-1001	M.F.RESISTOR	1.00K	1/10W
R115	NRVA02D-4701	M.F.RESISTOR	4.70K	1/10W
R116	NRVA02D-8200	M.F.RESISTOR	820	1/10W
R117	NRVA02D-1202	M.F.RESISTOR	12.0K	1/10W
R131	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R133	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R138	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R139	NRSA02J-102	M.G.RESISTOR	1.0K	1/10W
R140	NRSA02J-101	M.G.RESISTOR	100	1/10W
R141	NRSA02J-101	M.G.RESISTOR	100	1/10W
R142	NRSA02J-101	M.G.RESISTOR	100	1/10W
R147	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R148	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R149	NRSA02J-103	M.G.RESISTOR	10K	1/10W
R150	NRSA02J-103	M.G.RESISTOR	10K	1/10W
VR1	QVPB609-201	TRIM.RESISTOR	200	Y PED
VR2	QVPB609-101	TRIM.RESISTOR	100	Y GAIN
C1	QER41CM-476	E.CAPACITOR	47	16V

Symbol No.	Part No.	Part Name	Description	
C2	QER41CM-476	E.CAPACITOR	47	16V
C3	QER41CM-476	E.CAPACITOR	47	16V
C4	NCB21HK-473	CER.CAPACITOR	0.047	50V
C5	QEX41CM-156	E.CAPACITOR	15	16V
C6	QER41HM-105	E.CAPACITOR	1.0	50V
C7	QER41HM-474	E.CAPACITOR	0.47	50V
C8	QER41CM-476	E.CAPACITOR	47	16V
C9	QER41CM-476	E.CAPACITOR	47	16V
C10	QEPA1CM-226	E.CAPACITOR	22	16V
C11	QER41HM-474	E.CAPACITOR	0.47	50V
C12	QER41HM-474	E.CAPACITOR	0.47	50V
C13	QER41HM-474	E.CAPACITOR	0.47	50V
C14	QER41CM-476	E.CAPACITOR	47	16V
C15	QEX41CM-156	E.CAPACITOR	15	16V
C16	QEX41CM-156	E.CAPACITOR	15	16V
C17	QEX41CM-156	E.CAPACITOR	15	16V
C18	QEX41CM-156	E.CAPACITOR	15	16V
C19	QEX41CM-156	E.CAPACITOR	15	16V
C20	QEX41CM-156	E.CAPACITOR	15	16V
C35	NCB21HK-473	CER.CAPACITOR	0.047	50V
C36	NCB21HK-473	CER.CAPACITOR	0.047	50V
C38	NCB21HK-473	CER.CAPACITOR	0.047	50V
C39	NCB21HK-473	CER.CAPACITOR	0.047	50V
C41	NCB21HK-473	CER.CAPACITOR	0.047	50V
C45	NCB21HK-473	CER.CAPACITOR	0.047	50V
C46	NCB21HK-473	CER.CAPACITOR	0.047	50V
C47	NCB21HK-473	CER.CAPACITOR	0.047	50V
C48	NCT03CH-221	CER.CAPACITOR	220P	50V
C49	NCB21HK-473	CER.CAPACITOR	0.047	50V
C51	NCB21HK-473	CER.CAPACITOR	0.047	50V
C52	QEX41CM-156	E.CAPACITOR	15	16V
C53	NCB21HK-473	CER.CAPACITOR	0.047	50V
C55	QFN41HJ-103	MY.CAPACITOR	0.010	50V
C58	NCB21HK-473	CER.CAPACITOR	0.047	50V
C59	NCT03CH-4R0	CER.CAPACITOR	4.0P	50V
C60	NCB21HK-562	CER.CAPACITOR	5600P	50V
C61	NCT03CH-680	CER.CAPACITOR	68P	50V
C62	NCB21HK-473	CER.CAPACITOR	0.047	50V
C63	NCT03CH-220	CER.CAPACITOR	22P	50V
C64	NCB21HK-473	CER.CAPACITOR	0.047	50V
C66	NCB21HK-473	CER.CAPACITOR	0.047	50V
C73	NCT03CH-221	CER.CAPACITOR	220P	50V
C74	NCT03CH-270	CER.CAPACITOR	27P	50V
C75	NCT03CH-390	CER.CAPACITOR	39P	50V
C76	NCT03CH-100	CER.CAPACITOR	10P	50V
C77	NCT03CH-221	CER.CAPACITOR	220P	50V
C78	QFN41HJ-104	MY.CAPACITOR	0.10	50V
C79	NCB21HK-473	CER.CAPACITOR	0.047	50V
C84	NCT03CH-221	CER.CAPACITOR	220P	50V
C86	NCT03CH-560	CER.CAPACITOR	56P	50V
C89	QEPA1HM-105	E.CAPACITOR	1.0	50V
C91	QER41CM-476	E.CAPACITOR	47	16V
C92	NCB21HK-473	CER.CAPACITOR	0.047	50V
L1	SCV0331-680	PEAKING COIL	68μH	
L2	SCV0331-101	PEAKING COIL	100μH	
DL1	SCV2630-001	DELAY LINE		

Symbol No.	Part No.	Part Name	Description
S1	SCV1148-008	CONNECTOR	CLK SEL
S2	SCV1148-008	CONNECTOR	Y GAIN
S3	SCV1148-008	CONNECTOR	Y PED
S6	SCV2451-001	SWITCH	N/P
S7	SCV2419-8103	DIP SW	H PHASE
S8	SCV2451-001	SWITCH	INT/EXT
CN1	SCV1704-140	CONNECTOR	140PIN
TP2	SQMX001-001	TEST POINT	
TP4	SQMX001-001	TEST POINT	
TP6	SQMX001-001	TEST POINT	
TP9	SQMX001-001	TEST POINT	
TP12	SQMX001-001	TEST POINT	
TP13	SQMX001-001	TEST POINT	
TP14	SQMX001-001	TEST POINT	
TP15	SQMX001-001	TEST POINT	
TP16	SQMX001-001	TEST POINT	
FL1	SCV2408-001	LPF	
JK1	SSV1306-001	BNC CONNECTOR	Y
JK2	SSV1306-001	BNC CONNECTOR	SYNC
P1	SCV1149-001	SHORT PLUG	
P2	SCV1149-001	SHORT PLUG	
P3	SCV1149-001	SHORT PLUG	

5.31 DPO board (optional) assembly list ③①
SCK2391-00A

③①☐☐☐☐☐☐

Symbol No.	Part No.	Part Name	Description	
IC1	TD74BC574P	I.C.(M)	TOSHIBA	
IC2	TD74BC244P	I.C.(M)	TOSHIBA	
IC2	SCV2530-020	FERRITE BEAD		
IC3	TD74BC574P	I.C.(M)	TOSHIBA	
IC4	VS621PLJ	I.C.(M)	VTC	
IC4	SDV0022-052	IC SOCKET	52PIN	
IC5	VS621PLJ	I.C.(M)	VTC	
IC5	SDV0022-052	IC SOCKET	52PIN	
R2	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R3	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R4	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R5	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R6	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R7	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R8	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R9	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R10	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R11	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
C1	QER41CM-476	E.CAPACITOR	47	16V
C2	QCZ0206-104	CER.CAPACITOR	0.10	
C3	QER41CM-476	E.CAPACITOR	47	16V
C4	QCZ0206-104	CER.CAPACITOR	0.10	
C5	QCZ0206-104	CER.CAPACITOR	0.10	
C6	QCZ0206-104	CER.CAPACITOR	0.10	
C7	QCZ0206-104	CER.CAPACITOR	0.10	
C8	QEX41CM-156	E.CAPACITOR	15	16V
C9	QCZ0206-104	CER.CAPACITOR	0.10	
C10	QEX41CM-156	E.CAPACITOR	15	16V
C11	QCZ0206-104	CER.CAPACITOR	0.10	
C12	QEX41CM-156	E.CAPACITOR	15	16V
C13	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QEX41CM-156	E.CAPACITOR	15	16V
C15	QCZ0206-104	CER.CAPACITOR	0.10	
CN1	SCV1929-100	CONNECTOR	100PIN	
CN2	SCV2441-S25	DSUB CONNECTOR	25PIN	
CN3	SCV2441-S25	DSUB CONNECTOR	25PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
TP3	SQMX001-001	TEST POINT		

5.32 AKO board (optional) assembly list ③②
SCK2389-K0A

③②☐☐☐☐☐☐

Symbol No.	Part No.	Part Name	Description	
IC1	NJM79L05A	I.C.(M)	JRC	
IC2	LT1193CN8	I.C.(M)	LINEAR TECHNOLO	
IC3	TA78L005AP	I.C.(M)	TOSHIBA	
IC8	TD74BC574P	I.C.(M)	TOSHIBA	
IC9	EPM032-15-0015	I.C.(M)	ALTERA	
IC9	SDV0022-044	IC SOCKET	44PIN	
IC10	UPD42101C-3	I.C.(M)	NEC	
IC11	74AC175PC	I.C.(M)	NATIONAL SEMICO	
IC12	IDT49FCT805P	I.C.(M)	IDT	
IC12	SCV2530-020	FERRITE BEAD		
IC13	NJM7809FA	I.C.(M)	JRC	
IC14	SM5830P	I.C.(M)	NPC	
IC15	P20V8Q-15-0003	I.C.(M)	AMD	
IC15	SCV1205-024	IC SOCKET	24PIN	
IC16	TMC2242AR2C	I.C.(M)	RAYTHEON	
IC16	SDV0022-044	IC SOCKET	44PIN	
IC17	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC18	P16V8Q-15-0018	I.C.(M)	AMD	
IC18	SCV1205-020	IC SOCKET	20PIN	
IC20	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC21	MB40968P-G-SH	I.C.(M)	FUJITSU	
IC25	SCV2449-001	I.C.(M)	WAFER SCALE INT	
IC25	SCV1205-024	IC SOCKET	24PIN	
IC26	74AC377PC	I.C.(M)	NATIONAL SEMICO	
IC27	74AC161PC	I.C.(M)	NATIONAL SEMICO	
IC33	TD74BC574P	I.C.(M)	TOSHIBA	
IC34	TA78L005AP	I.C.(M)	TOSHIBA	
Q3	2SC1570NP(F)	TRANSISTOR	SANYO	
Q4	2SC1570NP(F)	TRANSISTOR	SANYO	
Q5	2SA1309A(RS)	TRANSISTOR	MATSUSHITA	
Q6	2SC1570NP(F)	TRANSISTOR	SANYO	
R1	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R2	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R3	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R4	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R5	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R6	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R7	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R8	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R9	QRD161J-103	CARBON RESISTOR	10K	1/6W
R11	QRD161J-103	CARBON RESISTOR	10K	1/6W
R12	QRD161J-103	CARBON RESISTOR	10K	1/6W
R13	QRD161J-103	CARBON RESISTOR	10K	1/6W
R14	QRD161J-103	CARBON RESISTOR	10K	1/6W
R21	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R22	QRD161J-331	CARBON RESISTOR	330	1/6W
R23	QRD161J-331	CARBON RESISTOR	330	1/6W
R24	QRV141F-2702	M.F.RESISTOR	27.0K	1/4W
R25	QRV141F-1203	M.F.RESISTOR	120K	1/4W
R26	QRV141F-1501	M.F.RESISTOR	1.50K	1/4W
R27	QRV141F-1202	M.F.RESISTOR	12.0K	1/4W
R28	QRV141F-1501	M.F.RESISTOR	1.50K	1/4W
R29	QRV141F-8202	M.F.RESISTOR	82.0K	1/4W
R30	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R31	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R32	QRD161J-103	CARBON RESISTOR	10K	1/6W
R33	QRD161J-182	CARBON RESISTOR	1.8K	1/6W

Symbol No.	Part No.	Part Name	Description	
R34	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R35	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R36	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R37	QRD161J-222	CARBON RESISTOR	2.2K	1/6W
R38	QRD161J-102	CARBON RESISTOR	1.0K	1/6W
R39	QRV141F-4700	M.F.RESISTOR	470	1/4W
R40	QRV141F-8201	M.F.RESISTOR	8.20K	1/4W
R41	QRV141F-8200	M.F.RESISTOR	820	1/4W
R42	QRV141F-5601	M.F.RESISTOR	5.60K	1/4W
R43	QRV141F-2700	M.F.RESISTOR	270	1/4W
R44	QRV141F-3301	M.F.RESISTOR	3.30K	1/4W
R45	QRV141F-5600	M.F.RESISTOR	560	1/4W
R46	QRV141F-3301	M.F.RESISTOR	3.30K	1/4W
R71	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R72	QRD161J-472	CARBON RESISTOR	4.7K	1/6W
R73	QRD161J-681	CARBON RESISTOR	680	1/6W
R75	QRV141F-75R0	M.F.RESISTOR	75.0	1/4W
R76	QRV141F-8200	M.F.RESISTOR	820	1/4W
R77	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R78	QRV141F-1001	M.F.RESISTOR	1.00K	1/4W
R79	QRV141F-2202	M.F.RESISTOR	22.0K	1/4W
R80	QRV141F-8200	M.F.RESISTOR	820	1/4W
R81	QRV141F-5601	M.F.RESISTOR	5.60K	1/4W
R82	QRV141F-1001	M.F.RESISTOR	1.00K	1/4W
R83	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R84	QRV141F-1002	M.F.RESISTOR	10.0K	1/4W
R85	QRV141F-1003	M.F.RESISTOR	100K	1/4W
VR1	QVPB609-102	TRIM.RESISTOR	1.0K	Y DC
VR2	QVPB609-501	TRIM.RESISTOR	500	Y GAIN
VR7	QVPB609-102	TRIM.RESISTOR	1.0K	SYNC
C1	QCZ0206-104	CER.CAPACITOR	0.10	
C6	QCZ0206-104	CER.CAPACITOR	0.10	
C7	QCZ0206-104	CER.CAPACITOR	0.10	
C8	QCZ0206-104	CER.CAPACITOR	0.10	
C12	QCZ0206-104	CER.CAPACITOR	0.10	
C13	QCZ0206-104	CER.CAPACITOR	0.10	
C14	QCZ0206-104	CER.CAPACITOR	0.10	
C15	QEX41CM-156	E.CAPACITOR	15	16V
C16	QCZ0206-104	CER.CAPACITOR	0.10	
C17	QCZ0206-104	CER.CAPACITOR	0.10	
C18	QEX41CM-156	E.CAPACITOR	15	16V
C19	QEX41CM-156	E.CAPACITOR	15	16V
C20	QCZ0206-104	CER.CAPACITOR	0.10	
C21	QEX41CM-156	E.CAPACITOR	15	16V
C22	QCZ0206-104	CER.CAPACITOR	0.10	
C24	QCZ0206-104	CER.CAPACITOR	0.10	
C29	QEX41CM-156	E.CAPACITOR	15	16V
C30	QCZ0206-104	CER.CAPACITOR	0.10	
C31	QER41HM-105	E.CAPACITOR	1.0	50V
C32	QCT25CH-270	CER.CAPACITOR	27P	50V
C33	QCT25CH-180	CER.CAPACITOR	18P	50V
C34	QCZ0206-104	CER.CAPACITOR	0.10	
C35	QER41CM-476	E.CAPACITOR	47	16V
C36	QCZ0206-104	CER.CAPACITOR	0.10	
C37	QER41CM-476	E.CAPACITOR	47	16V
C38	QCZ0206-104	CER.CAPACITOR	0.10	

Symbol No.	Part No.	Part Name	Description	
C39	QER41CM-476	E.CAPACITOR	47	16V
C40	QCZ0206-104	CER.CAPACITOR	0.10	
C41	QER41CM-476	E.CAPACITOR	47	16V
C52	QEPA1CM-106	E.CAPACITOR	10	16V
C54	QEX41CM-156	E.CAPACITOR	15	16V
C55	QEX41CM-156	E.CAPACITOR	15	16V
C56	QER41CM-476	E.CAPACITOR	47	16V
C57	QER41CM-476	E.CAPACITOR	47	16V
C63	QCT25CH-390	CER.CAPACITOR	39P	50V
LC3	SCV2412-001	LPF	13MHz	
S1	SCV1148-008	CONNECTOR	CLK SEL	
S2	SCV1148-008	CONNECTOR	Y GAIN	
S3	SCV2451-001	SWITCH	SET UP	
S6	SCV1148-008	CONNECTOR	SYNC	
S7	SCV2451-001	SWITCH	N/P	
S8	SCV2419-4103	DIP SW	SYNC POSITION	
CN1	SCV1929-100	CONNECTOR	100PIN	
TP1	SQMX001-001	TEST POINT		
TP2	SQMX001-001	TEST POINT		
JK1	SSV1306-001	BNC CONNECTOR	Y~1	
P1	SCV1149-001	SHORT PLUG		
P2	SCV1149-001	SHORT PLUG		
P6	SCV1149-001	SHORT PLUG		

SECTION 6
REPACKING

6.1 KM-5000P (CONTROL UNIT)

6.2 KM-5000M (MAIN UNIT)

QMP4908-250
POWER CABLE ASS'Y

SC45233-002
POLY BAG

SCV0286-001
TERMINAL PLUG

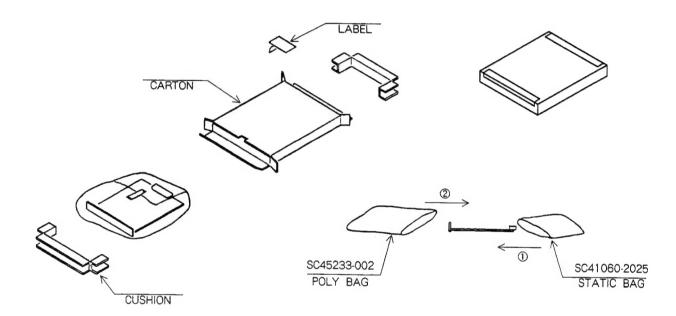CUSHION

LABEL × 2

QPGA005-00703
POLY BAG

CUSHION

SS42759
STOPPER

BAND

CARTON

6.3 KM-BK5001 / KM-BK5002 / KM-BK5003 / KM-BK5004 / KM-BK5005
KM-BK5011 / KM-BK5012 / KM-BK5013 / KM-BK5014 / KM-BK5015 (OPTIONAL)